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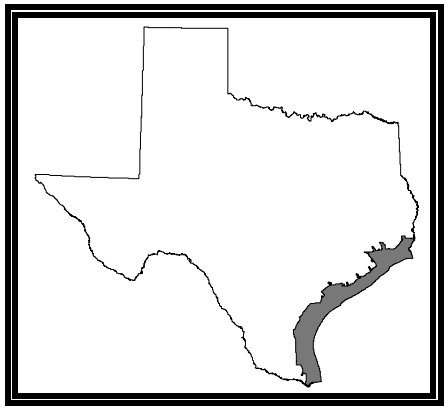
Basin 24
Bays and Estuaries



Bays and Estuaries Narrative Summary

The Texas Coast portion of the Gulf of Mexico includes nine major bay systems. The entire region is part of the Western Gulf Coastal Plain ecoregion. The coastal plain is characterized by a gently sloping, lowland environment. Historical periods of coastal flooding and intense sediment deposition have sculpted the Gulf of Mexico shoreline. Today, much of the coastal region is comprised of large bays, lagoons, extensive wetlands, sandy beaches, and barrier islands. The estuaries are typically bordered by tidal marshes and mud-sand flats. Most of the Texas estuaries are shallow, have turbid water due to suspended sediment, and are semi-enclosed by barrier islands.

For this report, all of the 44 classified estuarine segments and water bodies are organized into a single basin to unify discussion and presentation of data. In total, the estuarine water bodies cover approximately 1,991 square miles. Verbal descriptions of these estuarine water bodies have not been finalized, but approximate boundaries are illustrated on the upper, middle, and lower basin maps.

Estuaries are formed where rivers, streams, and bayous meet the salt water of the Gulf of Mexico. In the estuaries, tides mix inflowing freshwater with saline water from the Gulf of Mexico. In Texas, estuaries are protected by barrier islands. Estuarine habitats include river deltas, emergent marshes, mud and sand flats, submerged seagrass beds, oyster reefs, and open bay bottoms. Estuarine waters also include the tidally influenced parts of rivers, streams, and bayous. The tidal portions of most major streams and rivers have been established as classified segments by the TNRCC. Descriptions of their physical and water quality characteristics are discussed in the individual river basin narrative summaries. The remaining estuarine waters are primarily primary, secondary, and tertiary bays. These areas serve as important nursery areas for many commercial fish and shellfish populations, including shrimp, oysters, crabs, and scallops. Recreational anglers also enjoy harvesting fish that reproduce or feed in estuaries, such as red drum, spotted seatrout, and flounder.

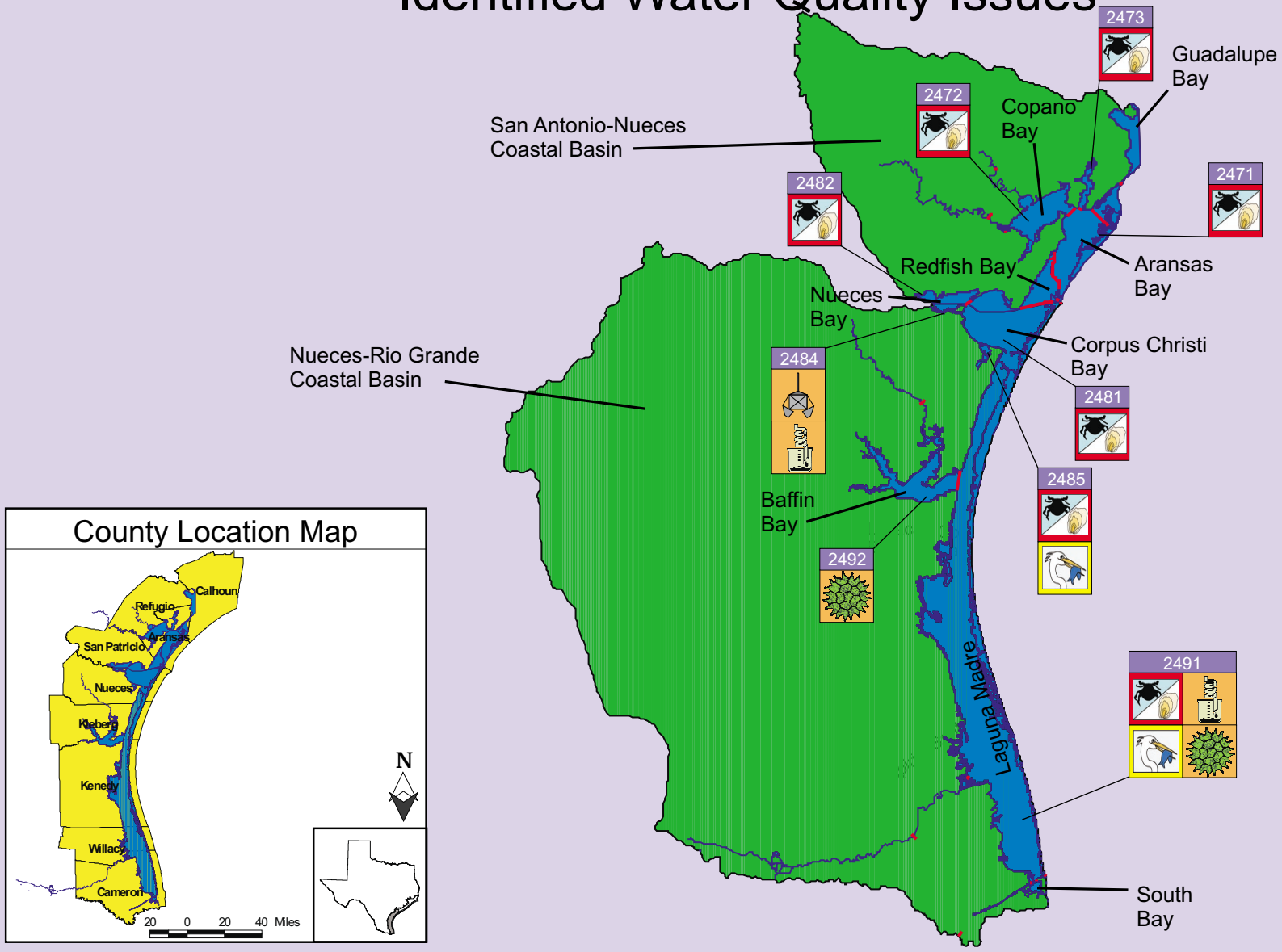
The estuaries are primarily monitored by the TNRCC, CRP and the TDH. These three agencies have routinely monitored 334 surface water quality monitoring sites on the classified bay segments and 23 additional sites on unclassified bay waters during the current year (2000). Two of the most common problems in the bays are related to natural conditions. Freshwater inflow to the bays is mainly from river systems such as the Sabine, Neches, Trinity, Brazos, Colorado, Guadalupe, and Nueces. The presence of barrier islands, coupled with low runoff and high evaporation rates along the southern Texas coast, produces hypersaline conditions in these estuaries, particularly in the summer months. During warm summer

months, water temperatures in the Texas estuaries often exceed 34° C (94.3° F). The elevated temperatures reduce the ability of the water to hold dissolved oxygen, so sometimes concentrations are depressed below criteria. Eight estuarine water bodies have been identified with depressed dissolved oxygen concentrations that cause impairment of the aquatic life use. Elevated fecal coliform densities is the most common problem in the bays causing impairment of the oyster waters use in portions of 21 segments. Fecal coliform densities cause impairment of the contact recreation use only in Tabbs Bay (Segment 2426) and Scott Bay (Segment 2426).

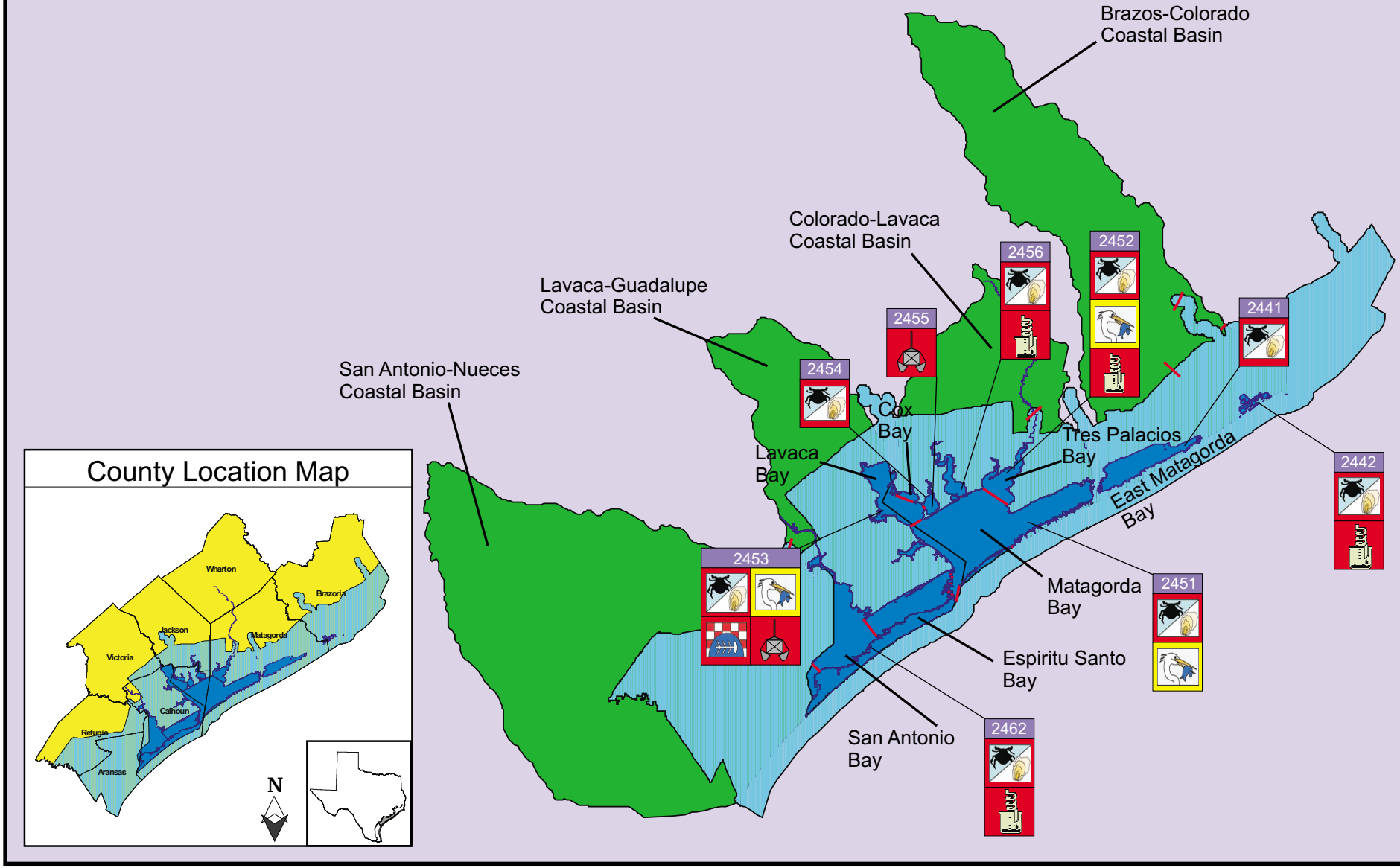
The TDH has issued a consumption advisory for Upper Galveston Bay and associated side bays. The advisory was issued due to elevated dioxin levels in catfish and blue crabs. The TDH has also issued an aquatic life closure for parts of Lavaca Bay due to elevated mercury levels in fish and crabs. The closure prohibits the possession of any finfish or crabs from the areas.

Many of the water bodies are enriched with nutrient compounds. Nutrient sources are from both point and nonpoint discharges. These inputs are known to have direct effects on water quality. In some cases, excess nutrients can stimulate algal blooms that can lead to increased turbidity, wide temporal changes in dissolved oxygen, and changes in structure and function of aquatic communities. Though most of the bays are enriched with nutrients, screening levels for at least one type of nutrient are exceeded in 18 segments. However, in response to elevated nutrient concentrations, only five estuarine water bodies have shown excessive algal blooms (as estimated by chlorophyll *a*). The sediments of the bays tend to accumulate metals. Elevated concentrations of various metals are found in sediments of three bay segments.

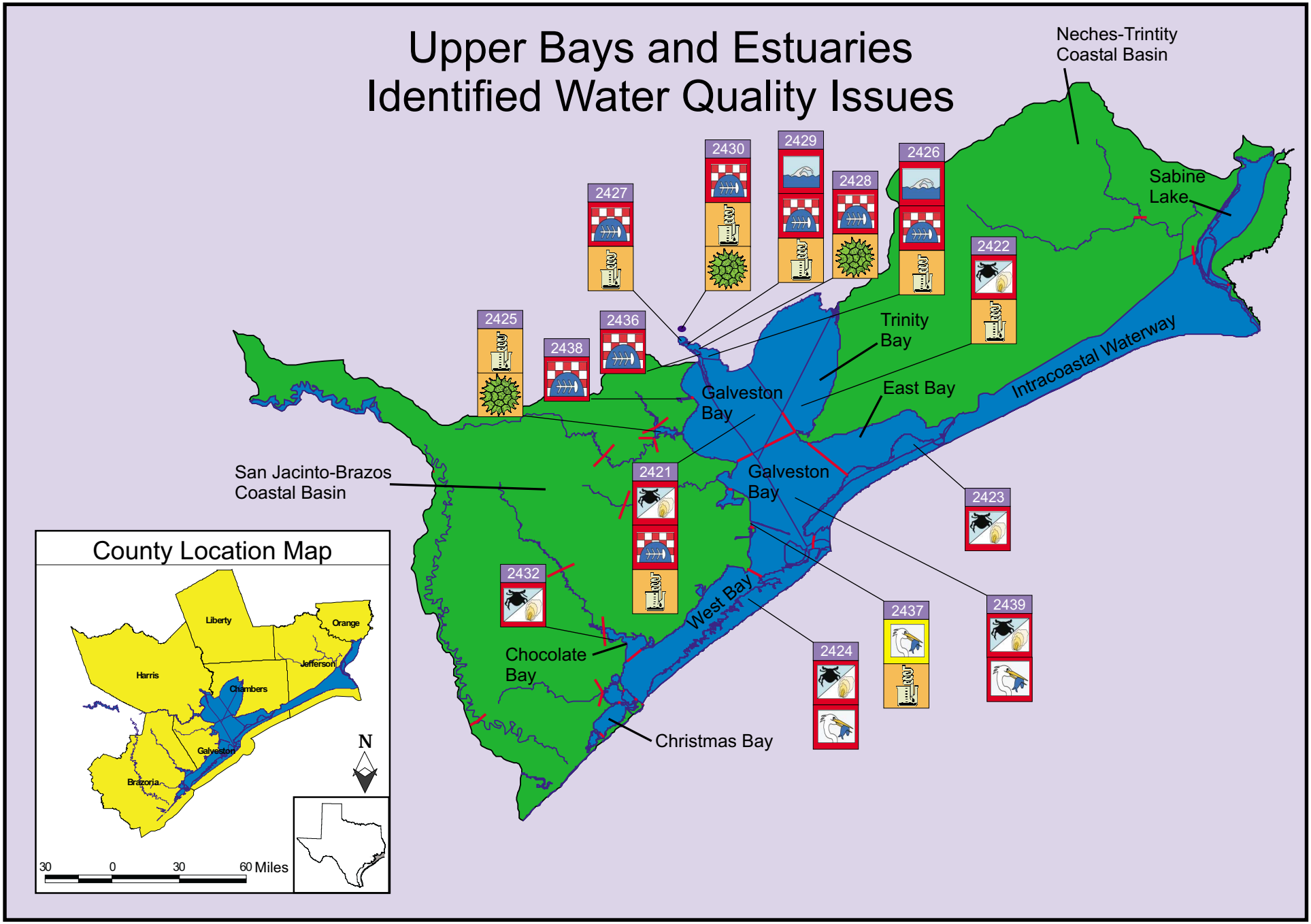
Lower Bays and Estuaries
Identified Water Quality Issues



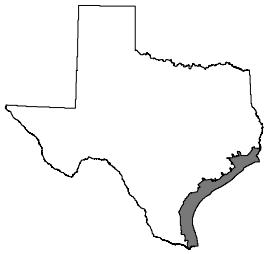
Middle Bays and Estuaries
Identified Water Quality Issues



Upper Bays and Estuaries
Identified Water Quality Issues



Bays and Estuaries Graphical Summary

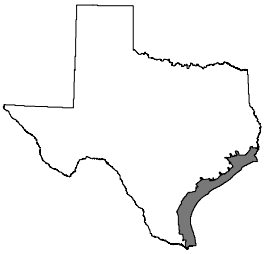
Basin Map	Water Bodies									
	**Segment 2411** Sabine Pass	**Segment 2412** Sabine Lake	**Segment 2421** Upper Galveston Bay	**Segment 2422** Trinity Bay	**Segment 2423** East Bay	**Segment 2424** West Bay	**Segment 2425** Clear Lake	**Segment 2426** Tabbs Bay	**Segment 2427** San Jacinto Bay	**Segment 2428** Black Duck Bay
DESIGNATED USE SUPPORT										
Contact Recreation	S	S	S	S	S	S	S	N	S	NA
Noncontact Recreation	X	X	X	X	X	X	X	X	X	X
Oyster Waters	NA	NA	N	N	N	N	X	X	X	X
Fish Consumption										
Human Health	NA	NA	NA	S	S	S	NA	NA	NA	NA
Advisories/Closures	NA	S	N	NA	S	S	NA	N	N	N
Aquatic Life										
Dissolved Oxygen (Grab)	S	S	S	S	S	S	S	S	S	S
Dissolved Oxygen (24-Hour)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals in Water	NA	NA	NA	S	NA	N	NA	NA	NA	NA
Organics in Water	NA	NA	NA	NA	S	NA	NA	NA	NA	NA
Water Toxicity Tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sediment Toxicity Tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Macrobenthos	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fish	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GENERAL USE SUPPORT										
Water Temperature	S	S	S	S	S	S	S	S	S	S
pH	S	S	S	S	S	S	S	S	S	S

S = Support; P = Partial Support; N = Nonsupport; T = Threatened; NC = No Concern; C = Concern;
NA = Not Assessed; X = Not Applicable

Bays and Estuaries Graphical Summary (Continued)

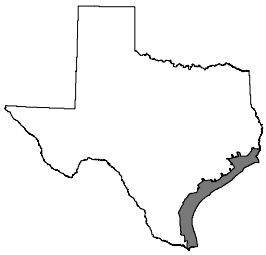
Basin Map	Water Bodies									
	**Segment 2411** Sabine Pass	**Segment 2412** Sabine Lake	**Segment 2421** Upper Galveston Bay	**Segment 2422** Trinity Bay	**Segment 2423** East Bay	**Segment 2424** West Bay	**Segment 2425** Clear Lake	**Segment 2426** Tabbs Bay	**Segment 2427** San Jacinto Bay	**Segment 2428** Black Duck Bay
WATER QUALITY CONCERNS										
Contact Recreation	X	X	X	X	X	X	X	X	X	NA
Noncontact Recreation	X	X	X	X	X	X	X	X	X	X
Fish Tissue	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sediment	NA	NC	NA	NA	NA	NA	NA	NA	NA	AN
Narrative	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Nutrient Enrichment										
Ammonia Nitrogen	NC	NC	NC	NC	NC	NC	NC	C	C	NC
Nitrite + Nitrate Nitrogen	NC	NC	C	C	NC	NC	C	C	C	NC
Orthophosphorus	NC	NC	NC	NC	NC	NC	C	C	C	NC
Total Phosphorus	NC	NC	NC	NC	NC	NC	C	C	C	NC
Chlorophyll *a*	NC	NC	NC	NC	NC	NC	C	NC	NC	C
Aquatic Life										
Dissolved Oxygen	X	X	X	X	X	X	X	X	X	X
Metals in Water	NA	NA	NA	X	NA	NA	NA	NA	NA	NA
Organics in Water	NA	NA	NA	NA	X	NA	NA	NA	NA	NA
Water Toxicity Tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sediment Toxicity Tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Bays and Estuaries Graphical Summary

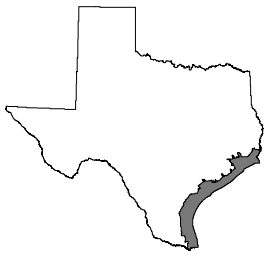
Basin Map	Water Bodies									
	**Segment 2429** Scott Bay	**Segment 2430** Burnett Bay	**Segment 2431** Moses Lake	**Segment 2432** Chocolate Bay	**Segment 2433** Bastrop Bay/Oyster Lake	**Segment 2434** Christmas Bay	**Segment 2435** Drum Bay	**Segment 2436** Barbours Cut	**Segment 2437** Texas City Ship Channel	**Segment 2438** Bayport Channel
DESIGNATED USE SUPPORT										
Contact Recreation	N	S	NA	S	S	S	S	NA	S	NA
Noncontact Recreation	X	X	X	X	X	X	X	X	X	X
Oyster Waters	X	X	X	N	S	S	S	X	X	X
Fish Consumption										
Human Health	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Advisories/Closures	N	N	NA	S	S	S	NA	N	NA	N
Aquatic Life										
Dissolved Oxygen (Grab)	S	S	S	S	S	S	S	S	P	S
Dissolved Oxygen (24-Hour)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals in Water	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Organics in Water	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Water Toxicity Tests	NA	NA	NA	NA	NA	S	S	NA	NA	NA
Sediment Toxicity Tests	NA	NA	NA	NA	NA	S	NA	NA	NA	NA
Macrobenthos	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fish	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GENERAL USE SUPPORT										
Water Temperature	S	S	S	S	S	S	S	NA	S	NA
pH	S	S	S	S	S	S	S	NA	S	NA

S = Support; P = Partial Support; N = Nonsupport; T = Threatened; NC = No Concern; C = Concern;
NA = Not Assessed; X = Not Applicable

Bays and Estuaries Graphical Summary (Continued)

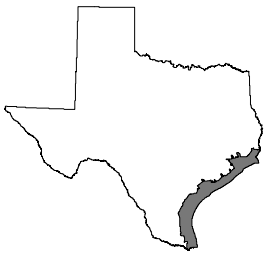
Basin Map	Water Bodies									
	**Segment 2429** Scott Bay	**Segment 2430** Burnett Bay	**Segment 2431** Moses Lake	**Segment 2432** Chocolate Bay	**Segment 2433** Bastrop Bay/Oyster Lake	**Segment 2434** Christmas Bay	**Segment 2435** Drum Bay	**Segment 2436** Barbours Cut	**Segment 2437** Texas City Ship Channel	**Segment 2438** Bayport Channel
WATER QUALITY CONCERNS										
Contact Recreation	NA	X	NA	X	X	X	X	NA	X	NA
Noncontact Recreation	X	X	X	X	X	X	X	X	X	X
Fish Tissue	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sediment	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Narrative	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Nutrient Enrichment										
Ammonia Nitrogen	C	C	NC	NC	NC	NC	NC	NA	C	NA
Nitrite + Nitrate Nitrogen	C	C	NC	NC	NC	NC	NC	NA	NC	NA
Orthophosphorus	C	C	NC	NC	NC	NC	NC	NA	NC	NA
Total Phosphorus	C	C	NC	NC	NC	NC	NC	NA	NC	NA
Chlorophyll *a*	NC	C	NC	NC	NC	NC	NC	NA	NC	NA
Aquatic Life										
Dissolved Oxygen	X	X	X	X	X	X	X	X	X	X
Metals in Water	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Organics in Water	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Water Toxicity Tests	NA	NA	NA	NA	NA	X	X	NA	NA	NA
Sediment Toxicity Tests	NA	NA	NA	NA	NA	X	NA	NA	NA	NA

Bays and Estuaries Graphical Summary

Basin Map	Water Bodies									
	**Segment 2439** Lower Galveston Bay	**Segment 2441** East Matagorda Bay	**Segment 2442** Cedar Lakes	**Segment 2451** Matagorda Bay/ Powderhorn Lake	**Segment 2452** Tres Palacios Bay/Turtle Bay	**Segment 2453** Lavaca Bay/Chocolate Bay	**Segment 2453A** Garcitas Creek Tidal	**Segment 2453B** Lynns Bayou Basin	**Segment 2454** Cox Bay	**Segment 2454A** Cox Lake
DESIGNATED USE SUPPORT										
Contact Recreation	S	S	S	S	S	S	S	S	S	S
Noncontact Recreation	X	X	X	X	X	X	X	X	X	X
Oyster Waters	N	N	N	N	N	N	X	X	N	X
Fish Consumption										
Human Health	S	NA	NA	NA	NA	N	NA	NA	NA	NA
Advisories/Closures	S	NA	NA	NA	NA	N	NA	NA	S	NA
Aquatic Life										
Dissolved Oxygen (Grab)	S	S	S	P	P	P	P	S	S	S
Dissolved Oxygen (24-Hour)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals in Water	N	NA	NA	NA	NA	NA	NA	NA	NA	NA
Organics in Water	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Water Toxicity Tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sediment Toxicity Tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Macrobenthos	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fish	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GENERAL USE SUPPORT										
Water Temperature	S	S	S	S	NA	S	X	X	S	X
pH	S	S	S	S	NA	S	X	X	S	X

S = Support; P = Partial Support; N = Nonsupport; T = Threatened; NC = No Concern; C = Concern;
NA = Not Assessed; X = Not Applicable

Bays and Estuaries Graphical Summary (Continued)

Basin Map	Water Bodies									
	**Segment 2439** Lower Galveston Bay	**Segment 2441** East Matagorda Bay	**Segment 2442** Cedar Lakes	**Segment 2451** Matagorda Bay/ Powderhorn Lake	**Segment 2452** Tres Palacios Bay/Turtle Bay	**Segment 2453** Lavaca Bay/Chocolate Bay	**Segment 2453A** Garcitas Creek Tidal	**Segment 2453B** Lynns Bayou Basin	**Segment 2454** Cox Bay	**Segment 2454A** Cox Lake
WATER QUALITY CONCERNS										
Contact Recreation	X	X	X	X	X	X	X	X	X	X
Noncontact Recreation	X	X	X	X	X	X	X	X	X	X
Fish Tissue	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sediment	NA	NA	NA	NA	NA	C	NA	NA	C	NA
Narrative	NC	NC	NC	NC	NC	NA	NC	NC	NC	NC
Nutrient Enrichment										
Ammonia Nitrogen	NC	NC	NC	NC	C	NC	NC	C	NC	NC
Nitrite + Nitrate Nitrogen	NC	NC	C	NC	NC	NC	NC	C	NC	NC
Orthophosphorus	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Total Phosphorus	NC	NC	NC	NC	NC	NC	C	NC	NC	C
Chlorophyll *a*	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Aquatic Life										
Dissolved Oxygen	X	X	X	X	X	X	X	X	X	X
Metals in Water	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Organics in Water	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Water Toxicity Tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sediment Toxicity Tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Bays and Estuaries Graphical Summary

Basin Map	Water Bodies									
	**Segment 2455** Keller Bay	**Segment 2456** Carancahua Bay	**Segment 2456A** West Carancahua Creek Tidal	**Segment 2461** Espiritu Santo Bay	**Segment 2462** San Antonio Bay/Hynes Bay/Guadalupe Bay	**Segment 2463** Mesquite Bay/ Carlos Bay/Ayres Bay	**Segment 2471** Aransas Bay	**Segment 2472** Copono Bay/ Port Bay/Mission Bay	**Segment 2473** St.Charles Bay	**Segment 2481** Corpus Christi Bay
DESIGNATED USE SUPPORT										
Contact Recreation	S	S	S	S	S	S	S	S	S	S
Noncontact Recreation	X	X	X	X	X	X	X	X	X	X
Oyster Waters	S	N	X	S	N	S	N	N	N	N
Fish Consumption										
Human Health	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Advisories/Closures	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aquatic Life										
Dissolved Oxygen (Grab)	S	S	S	S	S	S	S	S	S	S
Dissolved Oxygen (24-Hour)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals in Water	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Organics in Water	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Water Toxicity Tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sediment Toxicity Tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Macrobenthos	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fish	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GENERAL USE SUPPORT										
Water Temperature	S	S	X	S	S	S	S	S	S	S
pH	S	S	X	S	S	S	S	S	S	S

S = Support; P = Partial Support; N = Nonsupport; T = Threatened; NC = No Concern; C = Concern;
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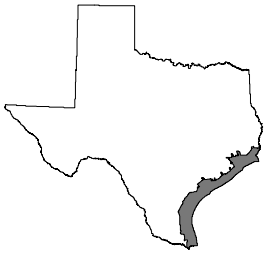
Bays and Estuaries Graphical Summary (Continued)

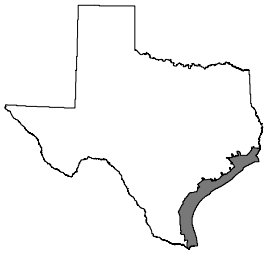
Basin Map	Water Bodies									
	**Segment 2455** Keller Bay	**Segment 2456** Carancahua Bay	**Segment 2456A** West Carancahua Creek Tidal	**Segment 2461** Espiritu Santo Bay	**Segment 2462** San Antonio Bay/Hynes Bay/Guadalupe Bay	**Segment 2463** Mesquite Bay/ Carlos Bay/Ayres Bay	**Segment 2471** Aransas Bay	**Segment 2472** Copono Bay/ Port Bay/Mission Bay	**Segment 2473** St.Charles Bay	**Segment 2481** Corpus Christi Bay
WATER QUALITY CONCERNS										
Contact Recreation	X	X	X	X	X	X	X	X	X	X
Noncontact Recreation	X	X	X	X	X	X	X	X	X	X
Fish Tissue	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sediment	C	NA	NA	NA	NA	NA	NA	NA	NA	NA
Narrative	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Nutrient Enrichment										
Ammonia Nitrogen	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Nitrite + Nitrate Nitrogen	NC	NC	C	NC	NC	NC	NC	NC	NC	NC
Orthophosphorus	NC	C	C	NC	NC	NC	NC	NC	NC	NC
Total Phosphorus	NC	C	C	NC	C	NC	NC	NC	NC	NC
Chlorophyll *a*	NC	NC	NC	NC	C	NC	NC	NC	NC	NC
Aquatic Life										
Dissolved Oxygen	X	X	X	X	X	X	X	X	X	X
Metals in Water	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Organics in Water	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Water Toxicity Tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sediment Toxicity Tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Bays and Estuaries Graphical Summary

Basin Map	Water Bodies									
	**Segment 2482** Nueces Bay	**Segment 2483** Redfish Bay	**Segment 2483A** Conn Brown Harbor	**Segment 2484** Corpus Chisti Inner Harbor	**Segment 2485** Oso Bay	**Segment 2491** Laguna Madre	**Segment 2492** Baffin Bay/Alazan Bay/Cayo del Grullo/Laguna Salada	**Segment 2493** South Bay	**Segment 2494** Brownsville Ship Channel	**Segment 2494A** Port Isabel Fishing Harbor
DESIGNATED USE SUPPORT										
Contact Recreation	S	S	S	X	S	S	S	S	X	S
Noncontact Recreation	X	X	X	S	X	X	X	X	S	X
Oyster Waters	N	NA	X	X	N	N	NA	S	X	X
Fish Consumption										
Human Health	NA	NA	NA	S	NA	NA	NA	NA	NA	NA
Advisories/Closures	NA	NA	NA	S	NA	S	NA	NA	S	NA
Aquatic Life										
Dissolved Oxygen (Grab)	S	S	N	S	P	P	S	S	S	S
Dissolved Oxygen (24-Hour)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals in Water	NA	NA	NA	S	NA	NA	NA	NA	NA	NA
Organics in Water	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Water Toxicity Tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sediment Toxicity Tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Macrobenthos	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fish	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GENERAL USE SUPPORT										
Water Temperature	S	S	X	S	S	S	S	S	S	X
pH	S	S	X	S	S	S	S	S	S	X

S = Support; P = Partial Support; N = Nonsupport; T = Threatened; NC = No Concern; C = Concern;
NA = Not Assessed; X = Not Applicable

Bays and Estuaries Graphical Summary (Continued)

Basin Map	Water Bodies									
	**Segment 2482** Nueces Bay	**Segment 2483** Redfish Bay	**Segment 2483A** Conn Brown Harbor	**Segment 2484** Corpus Chisti Inner Harbor	**Segment 2485** Oso Bay	**Segment 2491** Laguna Madre	**Segment 2492** Baffin Bay/Alazan Bay/Cayo del Grullo/Laguna Salada	**Segment 2493** South Bay	**Segment 2494** Brownsville Ship Channel	**Segment 2494A** Port Isabel Fishing Harbor
WATER QUALITY CONCERNS										
Contact Recreation	X	X	X	X	X	X	X	X	X	X
Noncontact Recreation	X	X	X	X	X	X	X	X	X	X
Fish Tissue	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sediment	NA	NA	NA	C	NA	NA	NA	NA	NA	NA
Narrative	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Nutrient Enrichment										
Ammonia Nitrogen	NC	NC	NC	C	NC	NC	NC	NC	NC	NC
Nitrite + Nitrate Nitrogen	NC	NC	NC	C	NC	C	NC	NC	NC	NC
Orthophosphorus	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Total Phosphorus	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Chlorophyll *a*	NC	NC	NC	NC	NC	C	C	NC	NC	NC
Aquatic Life										
Dissolved Oxygen	X	X	X	X	X	X	X	X	X	X
Metals in Water	NA	NA	NA	X	NA	NA	NA	NA	NA	NA
Organics in Water	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Water Toxicity Tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sediment Toxicity Tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Bays and Estuaries

Segment 2411 - Sabine Pass

Water body description: From the end of jetties at the Gulf of Mexico to SH 82

Water body classification: Classified

Water body type: Estuary

Water body length / area: 2.10 Sq. miles

Use support summary: Available data indicate that the aquatic life use is fully supported. The contact recreation use and general uses are supported. The fish consumption and oyster water uses were not assessed due to insufficient data.

Water quality concerns summary: Available data indicate that there are no concerns for nutrient enrichment. Sediment and fish tissue concerns were not assessed due to insufficient data.

Monitoring sites used in the assessment

Station	Station Description
13298	Sabine Pass adjacent to Coast Guard station in the Pass

Historical fish kills

Start date	Location	Fish killed	Suspected cause
10/13/1996	Texas Point Refuge on Texas Bayou, Sabine Pass	43	Low Dissolved Oxygen

Bays and Estuaries

Segment 2412 - Sabine Lake

Water body classification: Classified

Water body type: Estuary

Water body length / area: 68.70 Sq. miles

Use support summary: Available data indicate that the aquatic life, contact recreation, fish consumption, and general uses are supported. The oyster waters use was not assessed due to insufficient data.

Water quality concerns summary: Available data indicate no concerns for nutrient enrichment. Sediment and fish tissue concerns were not assessed due to insufficient data.

Monitoring sites used in the assessment

Station	Station Description
13300	Sabine Lake off Blue Buck Point
13302	Sabine Lake south and adjacent to Stewt's Island

Historical fish kills

Start date	Location	Fish killed	Suspected cause
07/01/1997	Sabine Lake at Pleasure Island Marina	1,000,000	Low Dissolved Oxygen

Bays and Estuaries

Segment 2421 - Upper Galveston Bay

Water body classification:	Classified
Water body type:	Estuary
Water body length / area:	108.20 Sq. miles

Use support summary:

The fish consumption use is not supported in the 22 square miles from Red Bluff Point to Five Mile Cut Marker to Houston Point, north to Morgan's Point. Restricted-consumption and no-consumption advisories were issued by the Texas Department of Health in September 1990 due to elevated levels of dioxin in blue crabs and catfish.

Based on Texas Department of Health shellfish maps, 55% of the bay (59.5 mi2 of the outer perimeter) does not support and 19% of the bay (20.6 mi2 of the area adjacent to the nonsupporting area) partially supports the oyster water use. The remaining 26% (21.8 mi2) fully supports the oyster water use. Partially supporting areas are conditionally approved for the growing and harvesting of shellfish. Nonsupporting areas are restricted or prohibited for the growing and harvesting of shellfish for direct marketing due to potential water quality concerns. Cause of nonsupport and partial support are due to urban and industrial sources.

The aquatic life, contact recreation, and general uses are supported.

Water quality concerns summary:

Nitrite + nitrate-nitrogen is a concern.

Additional information:

Projects are underway for fecal coliform bacteria and for dioxin in crab and fish tissue to do one or more of the following: assess the relevant water quality standard; to confirm the impairment; to conduct a total maximum daily load (TMDL) to evaluate the causes and sources and allocate the allowable loading; or to correct the impairment under another program. For more information on specific TMDL projects, visit the TNRCC Web site at *www.tnrcc.state.tx.us/water/quality/tmdl/*.

Monitoring sites used in the assessment

Station	Station Description
13303	Upper Galveston Bay HSC CM 63/64
13304	Upper Galveston Bay at HPL Robinson Plant Discharge Canal at Bacliff
13305	Upper Galveston Bay between HSC Marker 71 and outer beacon of Seabrook Channel (TPWD Marker)
13306	Upper Galveston Bay at end of Five Mile Pass at CM 6
13307	Upper Galveston Bay at HSC Marker 75/76
13312	Upper Galveston Bay at HSC Marker 85/86
14554	Upper Galveston Bay between Smith Point and Red Bluff
14555	Upper Galveston Bay 3 mi. east of HSC Marker 76
14556	Upper Galveston Bay between HSC Markers 79 and 80
14557	Upper Galveston Bay at Smith Point in the Trinity River Channel
14561	Upper Galveston Bay at Sylvan Beach
14562	Upper Galveston Bay between Red Bluff and HSC Marker 75
14563	Upper Galveston Bay between Smith Point and HSC Marker 75
14565	Upper Galveston Bay near Surf Oaks
14566	Upper Galveston Bay at HSC Marker 59
14569	Upper Galveston Bay at Switchover Reef
14570	Upper Galveston Bay
14571	Upper Galveston Bay at Kemah Marker 2
14572	Upper Galveston Bay between Kemah and Bayview
14579	Upper Galveston Bay at Cedar Bayou CM 14
14580	Upper Galveston Bay at Cedar Bayou CM 31
14581	Upper Galveston Bay at Bacliff Marker 2
14582	Upper Galveston Bay at Eagle Point
14598	Upper Galveston Bay at the Edgewater Café Pier in Kemah

Published studies

Publication	Date	Author
IS 87-06 Upper Galveston Bay	July 1984	Kirkpatrick, J.
IS 87-09 Upper Galveston Bay	Feb. 1985	Kirkpatrick, J.

Wastewater dischargers

Permit type	Number of outfalls
Domestic	9
Industrial	9

Historical fish kills

Start date	Location	Fish killed	Suspected cause
04/28/1996	Houston Yacht Club	50,000	Low Dissolved Oxygen
07/09/1996	Porto Fino Harbor canal in Galveston Bay	1,000	Low Dissolved Oxygen

Bays and Estuaries

Segment 2422 - Trinity Bay

Water body classification:	Classified
Water body type:	Estuary
Water body length / area:	130.10 Sq. miles

Use support summary: Based on Texas Department of Health shellfish maps, 69.3% of the bay (90.2 square miles of the outer perimeter) does not support and 13.8% of the bay (17.9 square miles of the area adjacent to the nonsupporting area) partially supports the oyster water use. The remaining 16.9% (22 square miles) fully supports the oyster water use. Partially supporting areas are conditionally approved for the growing and harvesting of shellfish. Nonsupporting areas are restricted or prohibited for the growing and harvesting of shellfish for direct marketing due to potential water quality concerns.

Available data indicate that other uses are supported.

Water quality concerns summary: Nitrite + nitrate-nitrogen is a concern in 97.6 square miles of the segment.

Additional information: A project is underway for fecal coliform bacteria to do one or more of the following: assess the relevant water quality standard; to confirm the impairment; to conduct a total maximum daily load (TMDL) to evaluate the causes and sources and allocate the allowable loading; or to correct the impairment under another program. For more information on specific TMDL projects, visit the TNRCC Web site at *www.tnrcc.state.tx.us/water/quality/tmdl/*.

Monitoring sites used in the assessment

Station	Station Description
13314	Trinity Bay TDHR Point Tri-13-16B (in Anahuac Channel at Marker 1)
13315	Trinity Bay 200 yds. north of Exxon C-1 Platform
13318	Trinity Bay in Double Bayou Channel at CM 4
14538	Trinity Bay between Lone Oak Bayou and Umbrella Point

Monitoring sites, continued

Station	Station Description
14539	Trinity Bay near Lone Oak Bayou
14540	Trinity Bay between Lone Oak Bayou and Vingt-Et-Un-Island
14541	Trinity Bay, middle of bay between Umbrella Point and Lone Bayou
14542	Trinity Bay at Umbrella Point
14543	Trinity Bay 2.3 mi. east of Houston Point
14544	Trinity Bay between Umbrella Point and Vingt-Et-Un Island
14545	Trinity Bay at first tripod North of Vingt-Et-Un Island
14546	Trinity Bay at Houston Point
14547	Trinity Bay at P and W Tern Reef Marker
14548	Trinity Bay at Point Barrow
14549	Trinity Bay at Cross Bayou

Wastewater dischargers

Permit type	Number of outfalls
Domestic	4
Industrial	11

Bays and Estuaries

Segment 2423 - East Bay

Water body classification: Classified

Water body type: Estuary

Water body length / area: 52.10 Sq. miles

Use support summary: Based on Texas Department of Health shellfish maps, 22.1% of the bay (11.5 square miles at the east end of the bay near East Bay Bayou and Intracoastal Waterway) does not support and 77.9% of the bay (the remaining 40.6 square miles) fully supports the oyster water use. Non-supporting areas are restricted or prohibited for the growing and harvesting of shellfish for direct marketing due to potential microbial contamination.

Available data indicate other uses are supported.

Water quality concerns summary: Available data indicate that there are no water quality concerns.

Additional information:

A project is underway for fecal coliform bacteria to do one or more of the following: assess the relevant water quality standard; to confirm the impairment; to conduct a total maximum daily load (TMDL) to evaluate the causes and sources and allocate the allowable loading; or to correct the impairment under another program. For more information on specific TMDL projects, visit the TNRCC Web site at *www.tnrcc.state.tx.us/water/quality/tmdl/*.

Monitoring sites used in the assessment

Station	Station Description
13320	East Bay ½ way between Marsh and Elm Grove Point
14522	East Bay at Elm Grove Point
14523	East Bay between Elm Grove and Stephenson Points
14524	East Bay 1 mi. east of Stephenson Point
14525	East Bay between Yates Bayou and Big Pasture Bayou

Monitoring sites, continued

Station	Station Description
14526	East Bay between Stephenson Point and Robinson Bayou
14527	East Bay at Marsh Point
14528	East Bay 1.8 mi. NE of Marsh Point
14529	East Bay at Robinson Bayou
14530	Eat Bay between Marsh and Mussel Points
14531	East Bay at Gas Pipe Reef
14532	East Bay 1.7 mi. south of Smith Point
14533	East Bay between Baffle and Elm Grove Points
14534	East Bay at Baffle Point
14535	East Bay west side of Little Baytown Pier, Smith Point
14536	East Bay east of tide gauge piling

Historical fish kills

Start date	Location	Fish killed	Suspected cause
07/26/1996	Oyster Bayou and Onion Bayou, Chambers County	1,000,000	Low Dissolved Oxygen
10/12/1996	Anhuac Refuge - Oyster Bayou approx. 1 mile in from the mouth of the bayou.	500	Low Dissolved Oxygen
07/23/1998	Internal canals @ Anahuac Wildlife Refuge	100,000	Low Dissolved Oxygen

Bays and Estuaries

Segment 2424 - West Bay

Water body classification:	Classified
Water body type:	Estuary
Water body length / area:	69.30 Sq. miles

Use support summary:

The aquatic life use is not supported in eight square miles near Carancahua Reef due to exceedance of the chronic criterion by the average dissolved copper concentration.

Based on Texas Department of Health shellfish maps, 35.2% of the bay (24.4 square miles at the east end near the Galveston and Texas City) does not support and 64.8% of the bay (the remaining 44.9 square miles) fully supports the oyster water use. Nonsupporting areas are restricted or prohibited for the growing and harvesting of shellfish for direct marketing due to potential microbial contamination.

The contact recreation, fish consumption, and general uses are supported.

Water quality concerns summary:

Available data indicate that there are no water quality concerns.

Additional information: A project is underway for fecal coliform bacteria to do one or more of the following: assess the relevant water quality standard; to confirm the impairment; to conduct a total maximum daily load (TMDL) to evaluate the causes and sources and allocate the allowable loading; or to correct the impairment under another program.

A project is scheduled for copper in water to do one or more of the following: assess the relevant water quality standard; to confirm the impairment; to conduct a total maximum daily load (TMDL) to evaluate the causes and sources and allocate the allowable loading; or to correct the impairment under another program.

For more information on specific TMDL projects, visit the TNRCC Web site at *www.tnrcc.state.tx.us/water/quality/tmdl/*.

Monitoring sites used in the assessment

Station	Station Description
13321	West Bay TDHR Point WES-00A86(at channel intersection near Teichman Point)
13323	West Bay in Jones Bay arm
13325	West Bay at Carancahua Reef
13328	West Bay midway between Alligator Point and San Luis Pass
13330	West Bay at San Luis Pass, near the West shore
14607	West Bay 50 yds. off Terramar Beach Channel Markers
14608	West Bay between Intracoastal Waterway Markers 59 and 60
14609	West Bay at Chocolate Bay Marker 22
14610	West Bay at Intracoastal Waterway Marker 11
14611	West Bay at Intracoastal Waterway Marker 1
14612	West Bay at end of Sea Isle Channel
14614	West Bay between alligator Point and Carancahua reef
14615	West Bay between Carancahua Lake and the Intracoastal Waterway
14616	West Bay 1000 yds. north of Jamica Beach Marina
14617	West Bay at Greens Lake and the Intracoastal Waterway
14618	West Bay at Mouth of Lake Como
14619	West Bay between Greens Lake and Hoeckers Point

Monitoring sites, continued

Station	Station Description
14620	West Bay at North Deer Island
14622	West Bay at range marker "D" , between South Deer Island and Teichman Point
14623	West Bay at Galveston Causeway and the Intracoastal Waterway

Published studies

Publication	Date	Author
AS 162/SR West Bay	Sept. 1995	Marks, L (Region 12)

Wastewater dischargers

Permit type	Number of outfalls
Domestic	15
Industrial	1

Historical fish kills

Start date	Location	Fish killed	Suspected cause
07/06/1995	Offats Bayou, area immediately behind Galveston Municipal Airport	100	Inorganic compound
09/22/1995	Highland Bayou diversionary canal (Hitchcock & Santa Fe area)	300	Inorganic compound
05/01/1996	North End of Carancua Lake near Carancua Bayou	500	Low Dissolved Oxygen
07/19/1996	Offats Bayou	1,000	Low Dissolved Oxygen
07/26/1996	Highland Bayou, Galveston County @ I-45 S.Feeder ½ mile past Hwy 519	40,600	Low Dissolved Oxygen
05/20/1997	West Bay drifting east towards the causeway	1,020	Disease
08/08/1997	Blue Heron and Sailfish Road in Bayou Vista	100,000	Low Dissolved Oxygen
05/19/1998	Terramar beach subdivision canals on west Galveston Island	1,000,000	Low Dissolved Oxygen
07/15/1998	Jamaica Beach subdivision (all canals)	500,000	Low Dissolved Oxygen
07/28/1998	Pirates Beach, TX subdivision	500,000	Low Dissolved Oxygen
05/16/1999	Spanish Grant subdivision, Galveston Island	5,000	Low Dissolved Oxygen

Bays and Estuaries

Segment 2425 - Clear Lake

Water body classification: Classified

Water body type: Estuary

Water body length / area: 2.00 Sq. miles

Use support summary: Available data indicate that the aquatic life, contact recreation, and general uses are supported. The fish consumption use was not assessed due to insufficient data.

Water quality concerns summary: Nitrite + nitrate, orthophosphorus, total phosphorus, and chlorophyll *a* are concerns.

Additional information: Additional data obtained from "Marina Impacts in Clear Lake and Galveston Bay" (TNRCC, Region 12).

Monitoring sites used in the assessment

Station	Station Description
13332	Clear Lake at SH 146 Drawbridge
13334	Clear Lake 0.3 km SE of NASA 1 Bridge
13335	Clear Lake at CM 17

Wastewater dischargers

Permit type	Number of outfalls
Domestic	1
Industrial	19

Historical fish kills

Start date	Location	Fish killed	Suspected cause
06/10/1994	Jarbo Bayou near Clear Lake Shores to the Clear Lake estuary	200,000	Low Dissolved Oxygen
10/01/1994	Clear Lake at Marina Del Sol & Watergate Marina	98,000	Organic compound
07/25/1995	Baytank docks, in the Clear Lake area	20	Organic compound
10/16/1997	Kemah Channel and SH 146	100	Physical Damage/Trauma

Bays and Estuaries

Segment 2426 - Tabbs Bay

Water body classification:	Classified
Water body type:	Estuary
Water body length / area:	3.60 Sq. miles

Use support summary: The contact recreation use is not supported due to elevated fecal coliform densities. The fish consumption use is not supported based on a no-consumption advisory issued for sensitive subpopulations by the Texas Department of Health in September 1990 due to elevated concentrations of dioxin in fish and crab tissue. The aquatic life and general uses are supported.

Water quality concerns summary: Ammonia nitrogen, nitrite + nitrate nitrogen, orthophosphorus, and total phosphorus are concerns.

Additional information: A wasteload evaluation (WLE) for dissolved oxygen was approved in 1983 and has been incorporated into the state Water Quality Management Plan. Advanced waste treatment is required for one or more dischargers.

A project is underway for dioxin in fish and crab tissue to do one or more of the following: assess the relevant water quality standard; to confirm the impairment; to conduct a total maximum daily load (TMDL) to evaluate the causes and sources and allocate the allowable loading; or to correct the impairment under another program.

A project is scheduled for fecal coliform bacteria to do one or more of the following: assess the relevant water quality standard; to confirm the impairment; to conduct a total maximum daily load (TMDL) to evaluate the causes and sources and allocate the allowable loading; or to correct the impairment under another program.

For more information on specific TMDL projects, visit the TNRCC Web site at *www.tnrcc.state.tx.us/water/quality/tmdl/*.

Monitoring sites used in the assessment

Station	Station Description
13336	Tabbs Bay at CM #14 in Barge Canal between the Houston Ship Channel and the mouth of Cedar Bayou

Published studies

Publication	Date	Author
IMS 80 Houston Ship Channel	July 1977	Bohmfalk, C.
IS 86-10 Houston Ship Channel	Aug. 1982	Kirkpatrick, J.
IS 87-06 Houston Ship Channel	July 1984	Kirkpatrick, J.
IS 87-09 Houston Ship Channel	Feb. 1985	Kirkpatrick, J.

Wastewater dischargers

Permit type	Number of outfalls
Domestic	3
Industrial	3

Historical fish kills

Start date	Location	Fish killed	Suspected cause
08/07/1994	Goose Creek at Baker Street in Baytown	26,529	Inorganic compound

Bays and Estuaries

Segment 2427 - San Jacinto Bay

Water body classification: Classified

Water body type: Estuary

Water body length / area: 2.10 Sq. miles

Use support summary: The fish consumption use is not supported based on a no-consumption advisory issued for sensitive subpopulations by the Texas Department of Health in September 1990 due to elevated concentrations of dioxin in fish and crab tissue. The aquatic life, contact recreation, and general uses are supported.

Water quality concerns summary: Ammonia nitrogen, nitrite + nitrate nitrogen, orthophosphorus, and total phosphorus are concerns.

Additional information: A wasteload evaluation (WLE) for dissolved oxygen was approved in 1983 and has been incorporated into the state Water Quality Management Plan. Advanced waste treatment is required for one or more dischargers.

A project is underway for dioxin in fish and crab tissue to do one or more of the following: assess the relevant water quality standard; to confirm the impairment; to conduct a total maximum daily load (TMDL) to evaluate the causes and sources and allocate the allowable loading; or to correct the impairment under another program. For more information on specific TMDL projects, visit the TNRCC Web site at *www.tnrcc.state.tx.us/ water/quality/tmdl/*.

Monitoring sites used in the assessment

Station	Station Description
13339	San Jacinto Bay at Buoy 15

Wastewater dischargers

Permit type	Number of outfalls
Domestic	2
Industrial	46

Bays and Estuaries

Segment 2428 - Black Duck Bay

Water body classification:	Classified
Water body type:	Estuary
Water body length / area:	0.60 Sq. miles

Use support summary: The fish consumption use is not supported based a no-consumption advisory issued by the Texas Department of Health in September 1990 due to elevated concentrations of dioxin in fish and crab tissue. The aquatic life and general uses are supported. The contact recreation use was not assessed due to insufficient data.

Water quality concerns summary: Chlorophyll *a* is a concern.

Additional information: A wasteload evaluation (WLE) for dissolved oxygen was approved in 1983 and has been incorporated into the state Water Quality Management Plan. Advanced waste treatment is required for one or more dischargers.

A project is underway for dioxin in fish and crab tissue to do one or more of the following: assess the relevant water quality standard; to confirm the impairment; to conduct a total maximum daily load (TMDL) to evaluate the causes and sources and allocate the allowable loading; or to correct the impairment under another program. For more information on specific TMDL projects, visit the TNRCC Web site at *www.tnrcc.state.tx.us/water/quality/tmdl/*.

Monitoring sites used in the assessment

Station	Station Description
13341	Black Duck Bay at SH 146 Bridge

Bays and Estuaries

Segment 2429 - Scott Bay

Water body classification:	Classified
Water body type:	Estuary
Water body length / area:	1.70 Sq. miles

Use support summary: The fish consumption use is not supported based on a no-consumption advisory issued for sensitive subpopulations by the Texas Department of Health in September 1990 due to elevated concentrations of dioxin in fish and crab tissue. The contact recreation use is not supported due to elevated fecal coliform densities. The aquatic life and general uses are supported.

Water quality concerns summary: Ammonia nitrogen, nitrite + nitrate nitrogen, orthophosphorus and total phosphorus are concerns.

Additional information: A wasteload evaluation (WLE) for dissolved oxygen was approved in 1983 and has been incorporated into the state Water Quality Management Plan. Advanced waste treatment is required for one or more dischargers.

A project is underway for dioxin in fish and crab tissue to do one or more of the following: assess the relevant water quality standard; to confirm the impairment; to conduct a total maximum daily load (TMDL) to evaluate the causes and sources and allocate the allowable loading; or to correct the impairment under another program.

A project is scheduled for fecal coliform bacteria to do one or more of the following: assess the relevant water quality standard; to confirm the impairment; to conduct a total maximum daily load (TMDL) to evaluate the causes and sources and allocate the allowable loading; or to correct the impairment under another program.

For more information on specific TMDL projects, visit the TNRCC Web site at *www.tnrcc.state.tx.us/water/quality/tmdl/*.

Monitoring sites used in the assessment

Station	Station Description
13342	Scott Bay at mid-bay

Wastewater dischargers

Permit type	Number of outfalls
Industrial	5

Bays and Estuaries

Segment 2430 - Burnett Bay

Water body classification: Classified

Water body type: Estuary

Water body length / area: 2.70 Sq. miles

Use support summary: The fish consumption use is not supported based on a no-consumption advisory issued for sensitive subpopulations by the Texas Department of Health in September 1990 due to elevated concentrations of dioxin in fish and crab tissue. Available data indicate other uses are supported.

Water quality concerns summary: Ammonia nitrogen, nitrite + nitrate nitrogen, orthophosphorus, total phosphorus, and chlorophyll *a* are concerns.

Additional information: A wasteload evaluation (WLE) for dissolved oxygen was approved in 1983 and has been incorporated into the state Water Quality Management Plan. Advanced waste treatment is required for one or more dischargers.

A project is underway for dioxin in fish and crab tissue to do one or more of the following: assess the relevant water quality standard; to confirm the impairment; to conduct a total maximum daily load (TMDL) to evaluate the causes and sources and allocate the allowable loading; or to correct the impairment under another program. For more information on specific TMDL projects, visit the TNRCC Web site at *www.tnrcc.state.tx.us/water/quality/tmdl/*.

Monitoring sites used in the assessment

Station	Station Description
13344	Burnett Bay at mid-bay

Wastewater dischargers

Permit type	Number of outfalls
Industrial	5

Historical fish kills

Start date	Location	Fish killed	Suspected cause
08/24/1997	In Baytown on canal behind Youpon Dr. On Freshwater Bayou off Burnett Bay	150,000	Low Dissolved Oxygen
08/12/1998	Canal subdivision on Freshwater Bayou	35,000	Low Dissolved Oxygen

Bays and Estuaries

Segment 2431 - Moses Lake

Water body classification: Classified

Water body type: Estuary

Water body length / area: 3.30 Sq. miles

Use support summary: Available data indicate that the aquatic life and general uses are supported. The fish consumption and contact recreation uses were not assessed due to insufficient data.

Water quality concerns summary: Available data indicate that there are no water quality concerns.

Monitoring sites used in the assessment

Station	Station Description
11400	Moses Bayou at SH 146 Bridge north of La Marque
13345	Moses Lake CM #9

Published studies

Publication	Date	Author
AS-127/SR Moses Lake	1973-84	Marks, L (Region 12)
AS-127/SR Texas City Ship Channel	1973-84	Marks, L (Region 12)

Wastewater dischargers

Permit type	Number of outfalls
Domestic	1
Industrial	3

Bays and Estuaries

Segment 2432 - Chocolate Bay

Water body classification: Classified

Water body type: Estuary

Water body length / area: 7.60 Sq. miles

Use support summary: Based on Texas Department of Health (TDH) maps, 100% (7.6 sq. miles) of Chocolate Bay is classified as a prohibited area and does not support the oyster waters use. The prohibited classification is due to potential microbial contamination. Available data indicate other uses are supported.

Water quality concerns summary: Available data indicate that there are no water quality concerns.

Additional information: A wasteload evaluation (WLE) for dissolved oxygen was approved in 1983 and has been incorporated into the state Water Quality Management Plan. Advanced waste treatment is required for one or more dischargers.

A project is underway for fecal coliform bacteria to do one or more of the following: assess the relevant water quality standard; to confirm the impairment; to conduct a total maximum daily load (TMDL) to evaluate the causes and sources and allocate the allowable loading; or to correct the impairment under another program. For more information on specific TMDL projects, visit the TNRCC Web site at *www.tnrcc.state.tx.us/water/quality/tmdl/*.

Monitoring sites used in the assessment

Station	Station Description
13346	Chocolate Bay at CM 9

Wastewater dischargers

Permit type	Number of outfalls
Domestic	8

Historical fish kills

Start date	Location	Fish killed	Suspected cause
10/04/1995	Near mouth of New Bayou, between Hwy 2004 and Chocolate Bay	200	Low Dissolved Oxygen
02/01/1999	West Bay-San Luis Pass to Jamaica Beach, Chocolate Bay and Halls Lake	1,488,616	Physical Damage/Trauma

Bays and Estuaries

Segment 2433 - Bastrop Bay/Oyster Lake

Water body classification: Classified

Water body type: Estuary

Water body length / area: 3.90 Sq. miles

Use support summary: Available data indicate that all uses are supported.

Water quality concerns summary: Available data indicate that there are no water quality concerns.

Monitoring sites used in the assessment

Station	Station Description
13348	Bastrop Bay at junction of 3 private channels at mid-bay
14654	Oyster Lake at mouth

Bays and Estuaries

Segment 2434 - Christmas Bay

Water body classification: Classified

Water body type: Estuary

Water body length / area: 8.90 Sq. miles

Use support summary: Available data indicate that all uses are supported.

Water quality concerns summary: Available data indicate that there are no water quality concerns.

Monitoring sites used in the assessment

Station	Station Description
13350	Christmas Bay midway between Christmas Point and Rattlesnake Point
13351	Christmas Bay at Christmas Point
13353	Christmas Bay ½ way between Churchill Bayou and SYS Bait Camp 50 ft. within the salt marsh and 0.5 mi. SW of Churchill Bayou
14649	Christmas Bay south side
14650	Christmas Bay northwest bank
14651	Christmas Bay north end
14888	Christmas Bay 100 yds. south of Follets Island Channel

Bays and Estuaries

Segment 2435 - Drum Bay

Water body classification: Classified

Water body type: Estuary

Water body length / area: 1.70 Sq. miles

Use support summary: Available data indicate that the aquatic life, contact recreation, and general uses are supported. The fish consumption use was not assessed due to insufficient data.

Water quality concerns summary: Available data indicate that there are no water quality concerns.

Monitoring sites used in the assessment

Station	Station Description
13354	Drum Bay mid-bay in Old Intracoastal Waterway
13562	Nicks Cut between GIWW and Drum Bay
14655	Drum Bay off Drum Point
14656	Drum Bay in Drum Point Channel
14657	Drum Bay at land cut
14658	Drum Bay at small peninsula on southeast side of Drum Point Channel

Bays and Estuaries

Segment 2436 - Barbours Cut

Water body classification: Classified

Water body type: Estuary

Water body length / area: 0.20 Sq. miles

Use support summary: The fish consumption use is not supported based on a no-consumption advisory issued for sensitive subpopulations by the Texas Department of Health in September 1990 due to elevated concentrations of dioxin in crab and fish tissue. Other uses were not assessed due to insufficient data.

Water quality concerns summary: Water quality concerns were not assessed due to insufficient data.

Additional information: A wasteload evaluation (WLE) for dissolved oxygen was approved in 1983 and has been incorporated into the state Water Quality Management Plan. Advanced waste treatment is required for one or more dischargers.

A project is underway for dioxin in fish and crab tissue to do one or more of the following: assess the relevant water quality standard; to confirm the impairment; to conduct a total maximum daily load (TMDL) to evaluate the causes and sources and allocate the allowable loading; or to correct the impairment under another program. For more information on specific TMDL projects, visit the TNRCC Web site at *www.tnrcc.state.tx.us/water/quality/tmdl/*.

Monitoring sites used in the assessment

Station	Station Description
13355	Barbours Cut mid-way between mouth and terminus

Wastewater dischargers

Permit type	Number of outfalls
Domestic	1
Industrial	3

Bays and Estuaries

Segment 2437 - Texas City Ship Channel

Water body classification: Classified

Water body type: Estuary

Water body length / area: 0.60 Sq. miles

Use support summary: The aquatic life use is partially supported due to depressed dissolved oxygen concentrations. The contact recreation and general uses are supported. The fish consumption use was not assessed due to insufficient data.

Water quality concerns summary: Ammonia nitrogen is a concern.

Additional information: A project is scheduled for dissolved oxygen to do one or more of the following: assess the relevant water quality standard; to confirm the impairment; to conduct a total maximum daily load (TMDL) to evaluate the causes and sources and allocate the allowable loading; or to correct the impairment under another program. For more information on specific TMDL projects, visit the TNRCC Web site at *www.tnrcc.state.tx.us/water/quality/tmdl/*.

Monitoring sites used in the assessment

Station	Station Description
13361	Texas City Ship Channel Texas City Canal midway between mouth and terminus

Published studies

Publication	Date	Author
IS 57 Texas City Ship Channel	April 1982	Kirkpatrick, J.

Wastewater dischargers

Permit type	Number of outfalls
Industrial	43

Historical fish kills

Start date	Location	Fish killed	Suspected cause
08/10/1994	Union Carbide discharge behind the Texas City dike in Galveston County	6,000	Inorganic compound
01/18/1996	Sterling dock in the Texas City Ship Channel	125	Pollutant
04/22/1996	Internal process canal (trib. to Texas City Ship Channel)	50,000	Low Dissolved Oxygen

Bays and Estuaries

Segment 2438 - Bayport Channel

Water body classification: Classified

Water body type: Estuary

Water body length / area: 0.90 Sq. miles

Use support summary: The fish consumption use is not supported based on a no-consumption advisory issued for sensitive subpopulations by the Texas Department of Health in September 1990 due to elevated concentrations of dioxin in fish and crab tissue. Other uses were not assessed due to insufficient data.

Water quality concerns summary: Water quality concerns were not assessed due to insufficient data.

Additional information: A project is underway for dioxin in fish and crab tissue to do one or more of the following: assess the relevant water quality standard; to confirm the impairment; to conduct a total maximum daily load (TMDL) to evaluate the causes and sources and allocate the allowable loading; or to correct the impairment under another program. For more information on specific TMDL projects, visit the TNRCC Web site at *www.tnrcc.state.tx.us/water/quality/tmdl/*.

Monitoring sites used in the assessment

Station	Station Description
13363	Bayport Channel mid-way between mouth and terminus

Wastewater dischargers

Permit type	Number of outfalls
Industrial	6

Bays and Estuaries

Segment 2439 - Lower Galveston Bay

Water body classification:	Classified
Water body type:	Estuary
Water body length / area:	139.60 Sq. miles

Use support summary:

The aquatic life use is not supported due to exceedance of the chronic criterion by the average dissolved copper concentration in an 8 square mile area near Redfish Island.

Based on Texas Department of Health shellfish maps, 43.5% of the bay (60.7 mi2 of the outer perimeter, Galveston and Texas City) does not support and 9.9% of the bay (13.8 mi2 of the area adjacent to the nonsupporting area) partially supports the oyster water use. The remaining 46.6% (65.1 mi2) fully supports the oyster water use. Nonsupporting areas are restricted or prohibited for the growing and harvesting of shellfish for direct marketing due to potential microbial contamination. Partially supporting areas are conditionally approved for the growing and harvesting of shellfish. Available data indicate that other uses and criteria for this water body are attained.

The contact recreation, fish consumption, and general uses are supported.

Water quality concerns summary:

Available data indicate that there are no water quality concerns.

Additional information:

A project is underway for fecal coliform bacteria to do one or more of the following: assess the relevant water quality standard; to confirm the impairment; to conduct a total maximum daily load (TMDL) to evaluate the causes and sources and allocate the allowable loading; or to correct the impairment under another program.

Additional information, continued:

A project is scheduled for copper in water to do one or more of the following: assess the relevant water quality standard; to confirm the impairment; to conduct a total maximum daily load (TMDL) to evaluate the causes and sources and allocate the allowable loading; or to correct the impairment under another program.

For more information on specific TMDL projects, visit the TNRCC Web site at *www.tnrcc.state.tx.us/water/quality/tmdl/*.

Monitoring sites used in the assessment

Station	Station Description
13364	Lower Galveston Bay at CM 2, ½ way between Smith and Eagle Point at south end of West Pass near Redfish Island
13366	Lower Galveston Bay TDHR Point GAL-00349(between Dollar Pt. and HSC)
13367	Lower Galveston Bay US Corps of Engineers Tide Gage near Hanna Reef
13369	Lower Galveston Bay in Galveston Channel near FLR 2
13372	Lower Galveston Bay Galveston Channel - mid-channel between Seawolf Park and Coast Guard station
14558	Galveston Bay between Leases 412-A and 387-A near Smith Point
14559	Lower Galveston Bay between Leases 413-A and 386-A near Smith Point
14564	Lower Galveston Bay at first pipeline marker NE of the HSC
14567	Lower Galveston Bay 1.9 mi. south of Hanna's Reef
14568	Lower Galveston Bay at HSC CM 53
14573	Lower Galveston Bay between Eagle and April Fool Points
14574	Lower Galveston Bay at Dickinson Bay CM 4
14575	Lower Galveston Bay at HSC Marker 35
14576	Lower Galveston Bay between LT/352 and LT/349, 400 yds. off shoreline
14577	Lower Galveston Bay at the Moses Lake Tide Gauge
14578	Lower Galveston Bay at Dickinson Bay CM 27
14583	Lower Galveston Bay in the Eagle Point Marina boat basin
14584	Lower Galveston Bay 500 yds. east of Eagle Point
14585	Lower Galveston Bay 900 yds. ESE of Eagle Point
14586	Lower Galveston Bay 300 yds. east of Eagle Point

Monitoring sites, continued

Station	Station Description
14587	Lower Galveston Bay at HSC Marker 49
14588	Lower Galveston Bay at HSC marker 43
14591	Lower Galveston Bay near Campbell Bayou
14592	Lower Galveston Bay at mouth of Texas City Turning Basin
14593	Lower Galveston Bay at Half Moon Shoal
14594	Lower Galveston Bay at ICWW west of Pelican Island
14595	Lower Galveston Bay near Pelican Island
14596	Lower Galveston Bay
14597	Lower Galveston Bay at HSC Marker 25
14884	Lower Galveston Bay 1.6 mi. SE of Eagle Point

Wastewater dischargers

Permit type	Number of outfalls
Domestic	6
Industrial	6

Historical fish kills

Start date	Location	Fish killed	Suspected cause
07/19/1995	HL&P spillway that leads into Galveston Bay in San Leon (Dickinson Bay)	15	Temperature
08/08/1996	Tributary to Dickinson Bayou, just south of Dickinson, Texas	12	Low Dissolved Oxygen

Bays and Estuaries

Segment 2441 - East Matagorda Bay

Water body classification:	Classified
Water body type:	Estuary
Water body length / area:	59.10 Sq. miles

Use support summary: Based on Texas Department of Health shellfish maps, 2.6% of the bay (1.5 square miles near the Caney Creek confluence with the bay, ICWW, marsh and cabins used for fishing) does not support and 24.7 % of the bay (14.6 square miles near the Live Oak Bayou confluence) partially supports the oyster waters use. The remaining 72.7% (43.0 square miles) fully supports the oyster waters use. Non-supporting areas are restricted or prohibited for the growing and harvesting of shellfish for direct marketing due to potential microbial contamination. Partially supporting areas are conditionally approved for the growing and harvesting of shellfish.

Available data indicate the aquatic life use, contact recreation use, and general uses are supported near the Intracoastal Waterway. The fish consumption use was not assessed due to insufficient data.

Water quality concerns summary: Available data indicate that there are no water quality concerns.

Additional information: A project is underway for fecal coliform bacteria to do one or more of the following: assess the relevant water quality standard; to confirm the impairment; to conduct a total maximum daily load (TMDL) to evaluate the causes and sources and allocate the allowable loading; or to correct the impairment under another program. For more information on specific TMDL projects, visit the TNRCC Web site at *www.tnrcc.state.tx.us/water/quality/tmdl/*.

Monitoring sites used in the assessment

Station	Station Description
13375	East Matagorda Bay near ICWW, south of Old Gulf
14660	East Matagorda Bay 0.5 mi. east of St. Mary's Bayou
14661	East Matagorda Bay between St. Mary's Bayou and the Matagorda Peninsula
14662	East Matagorda Bay 1 mi. north of Kain Cove
14663	East Matagorda Bay middle of bay
14664	East Matagorda Bay at the mouth of Boggy Bayou cut
14665	East Matagorda Bay 0.5 mi. west of Dressing Point
14666	East Matagorda Bay 800 yds. SE of Dressing Point

Published studies

Publication	Date	Author
R 88-02 San Antonio-Matagorda	Oct. 1988	Region 14

Wastewater dischargers

Permit type	Number of outfalls
Domestic	2

Historical fish kills

Start date	Location	Fish killed	Suspected cause
12/19/1996	East Matagorda Bay - Drews Lamp to Bird Island and Dressing Point Island	500	Temperature

Bays and Estuaries

Segment 2442 - Cedar Lakes

Water body classification: Classified

Water body type: Estuary

Water body length / area: 6.90 Sq. miles

Use support summary: Based on Texas Department of Health shellfish maps, the entire area does not support the oyster waters use. The Cedar Lakes area is restricted for the growing and harvesting of shellfish for direct marketing due to potential microbial contamination.

Available data indicate the aquatic life use, contact recreation use, and general uses are supported. The fish consumption use was not assessed due to insufficient data.

Water quality concerns summary: Nitrite + nitrate nitrogen is a concern.

Additional information: A project is underway for fecal coliform bacteria to do one or more of the following: assess the relevant water quality standard; to confirm the impairment; to conduct a total maximum daily load (TMDL) to evaluate the causes and sources and allocate the allowable loading; or to correct the impairment under another program. For more information on specific TMDL projects, visit the TNRCC Web site at *www.tnrcc.state.tx.us/water/quality/tmdl/*.

Monitoring sites used in the assessment

Station	Station Description
13376	Cedar lakes in Intracoastal Canal at east end of lakes

Historical fish kills

Start date	Location	Fish killed	Suspected cause
10/08/1995	At Brazoria National Wildlife Refugee near boat ramp at Cedar Lake Creek	500	Low Dissolved Oxygen
06/18/1997	Cedar Lake Creek at Hwy 2611 bridge crossing	150	Unknown

Bays and Estuaries

Segment 2451 - Matagorda Bay/Powderhorn Lake

Water body classification:	Classified
Water body type:	Estuary
Water body length / area:	261.70 Sq. miles

Use support summary:

The aquatic life use is partially supported due to depressed dissolved oxygen concentrations in the Palacios Channel near Marker 16.

Based on Texas Department of Health shellfish maps, 8.3% of the bay (21.7 square miles at the west end) does not support and 1.7% of the bay (4.4 square miles of Powderhorn Lake) partially supports the oyster waters use. The remaining 90% (235.6 square miles) fully supports the oyster waters use. Nonsupporting areas are restricted or prohibited for the growing and harvesting of shellfish for direct marketing due to potential microbial contamination. Partially supporting areas are conditionally approved for the growing and harvesting of shellfish.

The contact recreation and general uses are supported throughout the bay. The fish consumption use was not assessed due to insufficient data.

Water quality concerns summary:

Available data indicate that there are no water quality concerns.

Additional information:

Low dissolved oxygen concentrations appear to reflect natural conditions.

A project is underway for fecal coliform bacteria to do one or more of the following: assess the relevant water quality standard; to confirm the impairment; to conduct a total maximum daily load (TMDL) to evaluate the causes and sources and allocate the allowable loading; or to correct the impairment under another program.

Additional information, continued:

A project is scheduled for dissolved oxygen to do one or more of the following: assess the relevant water quality standard; to confirm the impairment; to conduct a total maximum daily load (TMDL) to evaluate the causes and sources and allocate the allowable loading; or to correct the impairment under another program.

For more information on specific TMDL projects, visit the TNRCC Web site at *www.tnrcc.state.tx.us/water/quality/tmdl/*.

Monitoring sites used in the assessment

Station	Station Description
13377	Matagorda Bay at Palacios CM 16
13378	Matagorda Bay Matagorda Ship CM #43
13379	Matagorda Bay at Matagorda Ship CM 21 at ICWW
13380	Matagorda Bay East arm about 6 mi. SE of Matagorda, same as Coastal Data System: line 333 site 03
14407	Matagorda Bay at Mad Island Reef
14670	Matagorda Bay 800 yds. south of the mouth of Carancahua Bay
14671	Matagorda Bay 300 yds. south of Well Point
14672	Matagorda Bay in Palacios Channel between CM 28 and 30
14673	Matagorda Bay at Palacios Point
14674	Matagorda Bay at ICWW CM 5
14675	Matagorda Bay 800 yds. SE of Mad Island reef
14676	Matagorda Bay between mouth of the Colorado River and Dog Island Reef
14677	Matagorda Bay at Dog Island Reef
14678	Matagorda Bay 1,200 yds. west of Dog Island Reef
14679	Matagorda Bay SSE of Shell Island Reef
14725	Powderhorn Lake at mouth\t
14726	Powderhorn Lake
14727	Powderhorn Lake
14728	Powderhorn Lake
14729	Powderhorn Lake

Monitoring stations, continued

Station	Station Description
14952	Matagorda Bay at Powderhorn Lake at Indianola Shrimp Fleet Harbor
14953	Matagorda Bay at public pier on Park Drive in Port O'Connor
14954	Matagorda Bay at Indianola at fishing pier, 2.5 km NW of Jims Fishing Center

Wastewater dischargers

Permit type	Number of outfalls
Domestic	2
Industrial	11

Bays and Estuaries

Segment 2452 - Tres Palacios Bay/Turtle Bay

Water body classification:	Classified
Water body type:	Estuary
Water body length / area:	14.70 Sq. miles

Use support summary:

The aquatic life use is partially supported due to depressed dissolved oxygen concentrations in the Palacios Harbor area.

Based on Texas Department of Health shellfish maps, 49% of the bay (7.2 square miles of the upper half) does not support and 51% (7.5 square miles of the lower half) partially supports the oyster waters use. Nonsupporting areas are restricted or prohibited for the growing and harvesting of shellfish for direct marketing due to potential microbial contamination. Partially supporting areas are conditionally approved for the growing and harvesting of shellfish.

The contact recreation use is supported throughout the bay. The fish consumption use and general uses were not assessed due to insufficient data.

Water quality concerns summary:

Ammonia nitrogen is a concern in Palacios Harbor.

Additional information:

A project is underway for fecal coliform bacteria to do one or more of the following: assess the relevant water quality standard; to confirm the impairment; to conduct a total maximum daily load (TMDL) to evaluate the causes and sources and allocate the allowable loading; or to correct the impairment under another program.

A project is scheduled for dissolved oxygen to do one or more of the following: assess the relevant water quality standard; to confirm the impairment; to conduct a total maximum daily load (TMDL) to evaluate the causes and sources and allocate the allowable loading; or to correct the impairment under another program.

Additional information, continued:

For more information on specific TMDL projects, visit the TNRCC Web site at *www.tnrcc.state.tx.us/water/quality/tmdl/*.

Monitoring sites used in the assessment

Station	Station Description
13381	Tres Palacios Bay Palacios CM #38
13382	Tres Palacios Bay at Palacios Harbor
14680	Tres Palacios Bay west of Pilkington Bayou
14681	Tres Palacios Bay 800 yds. south of Grassy Point
14682	Tres Palacios Bay 300 yds. south of the Baptist Encampment
14683	Tres Palacios Bay at mouth of cove on west side of Tres Palacios Bay
14684	Tres Palacios Bay at Coon Island
14685	Tres Palacios Bay at entrance to Oyster Lake
14686	Tres Palacios Bay at lighted piling 1.4 mi. south of Oliver Point
14687	Tres Palacios Bay 200 yds. SE of Turtle Point
14688	Tres Palacios Bay 600 yards offshore from Camp Hulen
14689	Tres Palacios Bay 200 yds. offshore from creek entrance of STP
14690	Tres Palacios Bay at Palacios CM 44
14691	Tres Palacios Bay 1,500 yds. east of Palacios CM 44
14693	Tres Palacios Bay at Palacios Turning Basin
14694	Turtle Bay mid Bay
14695	Turtle Bay at mouth

Wastewater dischargers

Permit type	Number of outfalls
Domestic	2
Industrial	1

Historical fish kills

Start date	Location	Fish killed	Suspected cause
05/18/1998	Palacios City Harbor	1,200,000	Low Dissolved Oxygen

Bays and Estuaries

Segment 2453 - Lavaca Bay/Chocolate Bay

Water body classification: Classified

Water body type: Estuary

Water body length / area: 54.80 Sq. miles

Use support summary: The aquatic life use is partially supported due to depressed dissolved oxygen concentrations in a 13.7-square-mile area near the Alcoa Ship Channel. The fish consumption use is not supported due to exceedance of the human health criterion in the Alcoa Ship Channel by the average mercury concentration in water. The Texas Department of Health has issued an aquatic life closure due to elevated mercury in finfish and crab tissue. This closure also causes nonsupport of the fish consumption use in a 2.5 square mile area of the bay near Port Comfort. Mercury contamination is residual from historical industrial point sources.

Based on Texas Department of Health shellfish maps, 34.1% of the bay (18.7 square miles in the north-northwest end of the bay near the Lavaca River confluence and the area around Port Lavaca, including Chocolate Bay) does not support and 37.7% of the bay (20.7 square miles of an area adjacent to the nonsupporting area on the west side of the bay) partially supports the oyster waters use. The remaining 28.2% (15.4 square miles) fully supports the oyster waters use. Nonsupporting areas are restricted or prohibited for the growing and harvesting of shellfish for direct marketing due to potential microbial contamination. Partially supporting areas are conditionally approved for the growing and harvesting of shellfish.

The contact recreation and general uses are supported.

Water quality concerns summary: Chromium and selenium concentrations in sediment are concerns near Port Lavaca. Chromium, manganese, and nickel concentrations in sediment are concerns in the ALCOA Ship Channel.

Additional information: Projects are underway for dissolved oxygen, fecal coliform bacteria, and mercury in water to do one or more of the following: assess the relevant water quality standard; to confirm the impairment; to conduct a total maximum daily load (TMDL) to evaluate the causes and sources and allocate the allowable loading; or to correct the impairment under another program.

A project is scheduled for mercury in finfish and crab tissue to do one or more of the following: assess the relevant water quality standard; to confirm the impairment; to conduct a total maximum daily load (TMDL) to evaluate the causes and sources and allocate the allowable loading; or to correct the impairment under another program.

For more information on specific TMDL projects, visit the TNRCC Web site at *www.tnrcc.state.tx.us/water/quality/tmdl/*.

Monitoring sites used in the assessment

Station	Station Description
13383	Lavaca Bay at SH 35 causeway
13384	Lavaca Bay "Y" intersection of Port Lavaca and Matagorda Ship Channels at Marker 66
13385	Lavaca Bay at Alcoa Ship Channel off loading dock
13563	Lavaca Bay 152 meters SSW of CM 22 in Red Bluff Channel
14701	Lavaca Bay at mouth of Port Lavaca Turning Basin
14702	Lavaca Bay between Lavaca CM 2, 8, and 9
14703	Lavaca Bay at Alcoa CM 78
14704	Lavaca Bay 300 yds. NE of Noble Point near south end of causeway
14705	Lavaca Bay off Noble Point
14706	Lavaca Bay between Alcoa CM 7 and 8
14707	Lavaca Bay at Shell Reef
14708	Lavaca Bay
14709	Lavaca Bay at mouth of Venado Creek
14710	Lavaca Bay
14711	Lavaca Bay middle of upper bay
14712	Lavaca Bay 800 yds. from the mouth of Garcitas Creek

Monitoring stations, continued

Station	Station Description
14714	Lavaca Bay 300 yds. offshore of Maxwell Dich
14717	Lavaca Bay between Matagorda CM 53 and 54
14718	Lavaca Bay at Rhodes Point
14720	Lavaca Bay near mouth of Lavaca River at CM 2
14721	Lavaca Bay off Sand Point
14724	Lavaca Bay 1 mi. north of Alamo Beach
14885	Lavaca Bay 0.5 mi. NW of Magnolia Beach
14886	Lavaca Bay at Chocolate Bay Channel
15368	Lavaca Bay in Lavaca Channel, 1.0 km south of CM 2, west of Point Comfort

Published studies

Publication	Date	Author
IMS 70 Lavaca Bay	Aug. 1976	Bowman/Jensen (Region14
LP 91-11 Placedo and Garcitas Creeks	Nov. 1988	Bowman/Jensen (Region 14)
SR 92-01 Lavaca Bay	Oct. 1990	Bowman/Jensen (Region 14)

Wastewater dischargers

Permit type	Number of outfalls
Domestic	9
Industrial	35

Historical fish kills

Start date	Location	Fish killed	Suspected cause
06/15/1994	Lavaca Bay, bulk loading area in Calhoun Co. Nav. Channel	3	Inorganic compound
04/11/1996	Lavaca Bay, Magnolia Beach at Crabbing Bridge	10,000	Low Dissolved Oxygen
04/25/1996	Refuge Harbor, Lavaca Harbor	20,000	Low Dissolved Oxygen
05/23/1996	Lavaca Bay, Pt Comfort, ALCOA offloading dock at stormwater discharge ditch	10	Physical Damage/Trauma
05/30/1996	Lavaca Bay, Palacids Creek to Gracitas Cove	3,500	Disease

Historical fish kills, continued

Start date	Location	Fish killed	Suspected cause
06/06/1996	Lavaca Bay, Lynn's Bayou, Highway 35 at Pizza Hut and movie theater	1,500,000	Low Dissolved Oxygen
12/04/1998	Cox Creek at Formosa Plastics Pt. Comfort.	21	Pollutant

Lavaca-Guadalupe Coastal Basin

Segment 2453A - Garcitas Creek Tidal (unclassified tidal tributary of Lavaca Bay east of Victoria in Victoria County)

Water body description:	From the confluence of Lavaca Bay in Jackson County to a point 8.5 miles upstream of FM 616 in Jackson County.
Water body classification:	Unclassified
Water body type:	Tidal Stream
Water body length / area:	15.20 Miles

Use support summary:	The aquatic life use is partially supported due to depressed dissolved oxygen concentrations. The contact recreation use is supported. The fish consumption use was not assessed due to insufficient data.
Water quality concerns summary:	Total phosphorus is a concern.
Additional information:	A project is scheduled for dissolved oxygen to do one or more of the following: assess the relevant water quality standard; to confirm the impairment; to conduct a total maximum daily load (TMDL) to evaluate the causes and sources and allocate the allowable loading; or to correct the impairment under another program. For more information on specific TMDL projects, visit the TNRCC Web site at *www.tnrcc.state.tx.us/water/quality/tmdl/*.

Monitoring sites used in the assessment

Station	Station Description
13289	Garcitas Creek at FM 616 2.2 mi. SW of Lasalle

Lavaca-Guadalupe Coastal Basin

Segment 2453B - Lynns Bayou Basin (unclassified water body in Port Lavaca in Calhoun County)

Water body description:	From the confluence with Lavaca Bay in Calhoun County to immediately south of SH 238 in Port Lavaca in Calhoun County.
Water body classification:	Unclassified
Water body type:	Estuary
Water body length / area:	0.01 Sq. miles
Use support summary:	Available data indicate the aquatic life and contact recreation uses are supported throughout the basin. The fish consumption use was not assessed due to insufficient data.
Water quality concerns summary:	Ammonia nitrogen and nitrite + nitrate nitrogen are concerns.

Monitoring sites used in the assessment

Station	Station Description
12534	Lynns Bayou Basin

Bays and Estuaries

Segment 2454 - Cox Bay

Water body classification:	Classified
Water body type:	Estuary
Water body length / area:	2.90 Sq. miles

Use support summary:

Based on the Texas Department of Health shellfish maps, 26.2% of the bay (0.8 square miles at the north end of the bay and Cox Creek) does not support the oyster waters use. The remaining 73.8% (2.1 square miles) of the bay fully supports the use. Nonsupporting areas are restricted or prohibited for the growing and harvesting of shellfish for direct marketing due to potential microbial contamination.

Available data indicate that the aquatic life, contact recreation, fish consumption, and general uses are supported.

Water quality concerns summary:

Near Point Comfort, arsenic, barium, lead, and mercury in sediment are concerns.

Additional information:

In April 1998, the Texas Department of Health issued an aquatic life closure for Cox Bay due to elevated mercury in fish tissue. In January 2000, the aquatic life closure was rescinded by the TDH after sampling revealed lower mercury concentrations in fish tissue. The fish consumption use is now supported.

A project is underway for fecal coliform bacteria to do one or more of the following: assess the relevant water quality standard; to confirm the impairment; to conduct a total maximum daily load (TMDL) to evaluate the causes and sources and allocate the allowable loading; or to correct the impairment under another program. For more information on specific TMDL projects, visit the TNRCC Web site at *www.tnrcc.state.tx.us/water/quality/tmdl/*.

Monitoring sites used in the assessment

Station	Station Description
13386	Cox Bay SE of Point Comfort
14719	Cox Bay at mouth of Huisache Cove

Wastewater dischargers

Permit type	Number of outfalls
Domestic	1
Industrial	4

Historical fish kills

Start date	Location	Fish killed	Suspected cause
04/17/1997	Central Power and Light (E&S Joslin Power Station), Cox Bay	700	Physical Damage/Trauma

Colorado-Lavaca Coastal Basin

Segment 2454A - Cox Lake (unclassified water body east of Point Comfort in Calhoun County)

Water body description:	From the dam site located 2.5 miles southeast of Point Comfort in Calhoun County to the Calhoun/Jackson County line.
Water body classification:	Unclassified
Water body type:	Reservoir
Water body length / area:	416 Acres

Use support summary:	Available data indicate the aquatic life and contact recreation uses are supported throughout the reservoir. The fish consumption use was not assessed due to insufficient data.
Water quality concerns summary:	Total phosphorus is a concern.

Monitoring sites used in the assessment

Station	Station Description
12514	Cox Lake at SH 35 north of Point Comfort

Bays and Estuaries

Segment 2455 - Keller Bay

Water body classification: Classified

Water body type: Estuary

Water body length / area: 7.50 Sq. miles

Use support summary: Based on Texas Department of Health shellfish maps, 86.6% (6.5 square miles) of the bay supports the oysters waters use. The remaining 13.4% (1.0 square miles near Keller Creek at the north end of the bay) was not assessed since the area is within the 1,000-foot buffer zone. Shellfish standards do not apply in the buffer zone.

Available data indicate that the aquatic life, contact recreation, and general uses are supported. The fish consumption use was not assessed due to insufficient data.

Water quality concerns summary: Arsenic in sediment is a concern.

Monitoring sites used in the assessment

Station	Station Description
13387	Keller Bay south of Olivia
14722	Keller Bay at mouth of the bay
14723	Keller Bay 1 mi. south of Olivia

Bays and Estuaries

Segment 2456 - Carancahua Bay

Water body classification: Classified

Water body type: Estuary

Water body length / area: 19.00 Sq. miles

Use support summary: Based on Texas Department of Health shellfish maps, 48.4% of the bay (9.2 square miles at the north end of the bay and Carancahua Creek) does not support the oyster waters use. The remaining 51.6% (9.8 square miles) of the bay fully supports the use. Nonsupporting areas are restricted or prohibited for the growing and harvesting of shellfish for direct marketing due to potential microbial contamination.

Available data indicate the aquatic life, contact recreation, and general uses are supported in the bay near SH 35. The fish consumption use was not assessed due to insufficient data.

Water quality concerns summary: In the upper bay near SH 35, orthophosphorus and total phosphorus are concerns.

Additional information: A project is underway for fecal coliform bacteria to do one or more of the following: assess the relevant water quality standard; to confirm the impairment; to conduct a total maximum daily load (TMDL) to evaluate the causes and sources and allocate the allowable loading; or to correct the impairment under another program. For more information on specific TMDL projects, visit the TNRCC Web site at *www.tnrcc.state.tx.us/water/quality/tmdl/*.

Monitoring sites used in the assessment

Station	Station Description
13388	Carancahua Bay at SH 35 between Port Lavaca and Palacios
13390	Carancahua Bay off SH 35 at boat ramp, 2 mi. west of 2456.0100
13391	Carancahua Bay off Port Alto
14696	Carancahua Bay 1,300 yds. NW of mouth

Monitoring sites, continued

Station	Station Description
14697	Carancahua Bay
14698	Carancahua Bay 100 yds. SW of platform ST 239
14699	Carancahua Bay 1.5 mi. north of platform ST 239
14700	Carancahua Bay near mouth of Carancahua Creek

Published studies

Publication	Date	Author
LP 200 Carancahua Bay	April 1985	Jensen/Bowman (Region 14

Wastewater dischargers

Permit type	Number of outfalls
Domestic	2

Colorado-Lavaca Coastal Basin

Segment 2456A - West Carancahua Creek Tidal (unclassified water body northeast of La Ward in Jackson County)

Water body description:	From the confluence with Carancahua Bay in Jackson County to Jackson CR 440, 6.3 miles upstream of FM 616 in Jackson County
Water body classification:	Unclassified
Water body type:	Tidal Stream
Water body length / area:	14.00 Miles
Use support summary:	Available data indicate that the aquatic life and contact recreation uses are fully supported. The fish consumption use was not assessed due to insufficient data.
Water quality concerns summary:	Nitrite + nitrate nitrogen, orthophosphorus, and total phosphorus are concerns.

Monitoring sites used in the assessment

Station	Station Description
13293	West Carancahua Creek at Jackson CR 440 (Bonnot Rd) 5.6 km (3.5 mi) NE of Laward

Bays and Estuaries

Segment 2461 - Espiritu Santo Bay

Water body classification: Classified

Water body type: Estuary

Water body length / area: 60.80 Sq. miles

Use support summary: Based on Texas Department of Health shellfish maps, nearly all of the bay (99%, 60.2 square miles) supports the oyster waters use. One small area (1%, 0.6 square miles) near the ICWW was not assessed since it falls within the 1,000-foot buffer zone. Shellfish standards do not apply in the buffer zone.

Available data indicate the aquatic life, contact recreation, and general uses are supported. The fish consumption use was not assessed due to insufficient data.

Water quality concerns summary: Available data indicate that there are no water quality concerns.

Monitoring sites used in the assessment

Station	Station Description
13396	Espiritu Santo Bay intersection of ferry channel and Intracoastal Canal near Port O' Connor
14730	Espiritu Santo Bay in middle of Port O' Connor's Little Jetty
14731	Espiritu Santo Bay in ICWW in front of POC coast guard station
14732	Espiritu Santo Bay at ferry CM 17
14733	Espiritu Santo Bay middle of Bay
14735	Espiritu Santo Bay at South Pass
14951	Espiritu Santo Bay at ICWW at Fulgrums Fishing Camp

Wastewater dischargers

Permit type	Number of outfalls
Domestic	2

Bays and Estuaries

Segment 2462 - San Antonio Bay/Hynes Bay/ Guadalupe Bay

Water body classification:	Classified
Water body type:	Estuary
Water body length / area:	119.50 Sq. miles

Use support summary: Based on Texas Department of Health shellfish maps, 8.5% of the bay (10.2 square miles at the north end of the bay near the San Antonio and Guadalupe River confluences and an area near Seadrift) does not support and 50.9% (60.8 square miles of the area south of the nonsupporting area, including Hynes Bay up to the ICWW) of the bay partially supports the oyster waters use. The remaining 40.6% (48.5 square miles) of the bay fully supports the oyster waters use. Nonsupporting areas are restricted or prohibited for the growing and harvesting of shellfish for direct marketing due to potential microbial contamination. Partially supporting areas are conditionally approved for the growing and harvesting of shellfish.

Available data indicate the aquatic life, contact recreation, and general uses are supported in Guadalupe Bay. The fish consumption use was not assessed due to insufficient data.

Water quality concerns summary: In Hynes Bay near Austwell, total phosphorus is a concern. In Guadalupe Bay, chlorophyll *a* is a concern.

Additional information: A project is underway for fecal coliform bacteria to do one or more of the following: assess the relevant water quality standard; to confirm the impairment; to conduct a total maximum daily load (TMDL) to evaluate the causes and sources and allocate the allowable loading; or to correct the impairment under another program. For more information on specific TMDL projects, visit the TNRCC Web site at *www.tnrcc.state.tx.us/water/quality/tmdl/*.

Monitoring sites used in the assessment

Station	Station Description
13397	San Antonio Bay including Hynes Bay and Guadalupe Bay Intracoastal Canal at Buoy C-17
13399	San Antonio Bay including Hynes Bay and Guadalupe Bay at Victoria CM 19 SW of Seadrift
14737	San Antonio Bay at intersection of the Seadrift Channel and Victoria Barge Canal
14738	San Antonio Bay at Mosquito Point
14739	San Antonio Bay between ICWW Markers 4 and 5
14740	San Antonio Bay 600 yds. west of South Pass Island Channel
14741	San Antonio Bay 800 yds. north of Panther Point
14742	San Antonio Bay at near Rattlesnake Island between ICWW Markers 57 and 2\T
14744	San Antonio Bay in ICWW between Markers 39 and 41
14749	Hynes Bay 400 yds. east of Austwell
14751	San Antonio Bay 800 yds. SE of Marsh Point
14752	San Antonio Bay 100 yds. SW of Victoria Barge CM 23
14753	San Antonio Bay 200 yds. south of Grassy Point
14754	Hynes Bay 1-1/4 mi north of Austwell
14755	San Antonio Bay 1 mi east of McDowell Point
14882	San Antonio Bay ½ mi east of Webb Point
14891	San Antonio Bay in Seadrift Harbor
14950	San Antonio Bay at public seawall in Seadrift Business District at Third Street
14956	San Antonio Bay including Hynes Bay at Austwell at TPWD public boat ramp

Wastewater dischargers

Permit type	Number of outfalls
Domestic	3
Industrial	1

Historical fish kills

Start date	Location	Fish killed	Suspected cause
09/22/1995	Hynes Bay at State boat ramp in Austwell	9,000,000	Low Dissolved Oxygen
05/17/1996	Swan Point, San Antonio Bay	4,000	Low Dissolved Oxygen
05/28/1996	Hynes Bay, along the City of Austwell shoreline	10,000	Disease

Bays and Estuaries

Segment 2463 - Mesquite Bay/Carlos Bay/Ayres Bay

Water body classification: Classified

Water body type: Estuary

Water body length / area: 12.60 Sq. miles

Use support summary: Based on Texas Department of Health shellfish maps, 95% (12 square miles) of the bay supports the oyster waters use. The remaining 5% (0.6 square miles along the ICWW) was not assessed, since the area falls within the 1,000-foot buffer zone. Shellfish standards do not apply in the buffer zone.

Available data indicate the aquatic life use is supported in Mesquite Bay near the Intracoastal Waterway (Marker 13). The contact recreation and general uses are supported. The fish consumption use was not assessed due to insufficient data.

Water quality concerns summary: Available data indicate that there are no water quality concerns.

Monitoring sites used in the assessment

Station	Station Description
13400	Mesquite Bay south of ICWW Marker 13
14396	Mesquite Bay at shallows on east side of bay, reefs located in shallows northwest of north point of Bray Cove
14756	Mesquite Bay at the intersection of Mesquite Bay and Cedar Bayou Channels
14757	Mesquite Bay 1 mi. west of third chain islands in Mesquite Bay Channel

Historical fish kills

Start date	Location	Fish killed	Suspected cause
07/16/1996	Mesquite Bay, Vincent Slough	2,200	Temperature

Bays and Estuaries

Segment 2471 - Aransas Bay

Water body classification:	Classified
Water body type:	Estuary
Water body length / area:	87.80 Sq. miles

Use support summary:

Based on Texas Department of Health shellfish maps, 7.8% of the bay (6.8 square miles along the northern edge of the bay and Rockport) does not support the oyster waters use. The remaining 92.2% of the bay (81.0 square miles) fully supports the oyster waters use. Nonsupporting areas are restricted or prohibited for the growing and harvesting of shellfish for direct marketing due to potential microbial contamination.

Available data indicate the aquatic life and general uses are supported in an 8 square mile portion of Aransas Bay near the Intracoastal Waterway south of Rockport. The contact recreation use is supported. The fish consumption use was not assessed due to insufficient data.

Water quality concerns summary:

Available data indicate that there are no water quality concerns.

Additional information:

A project is underway for fecal coliform bacteria to do one or more of the following: assess the relevant water quality standard; to confirm the impairment; to conduct a total maximum daily load (TMDL) to evaluate the causes and sources and allocate the allowable loading; or to correct the impairment under another program. For more information on specific TMDL projects, visit the TNRCC Web site at *www.tnrcc.state.tx.us/water/quality/tmdl/*.

Monitoring sites used in the assessment

Station	Station Description
13402	Aransas Bay intersection of Intracoastal Canal and Lydia Ann channel south of Rockport
14758	Aransas Bay 3/4 mi. east of Rockport
14760	Aransas Bay at Shellfish Marker 2
14761	Aransas Bay 1 mi. SE of Fulton
14762	Aransas Bay 3/4 mi. NE of Fulton
14763	Aransas Bay 1-2 mi. NE of Aransas County Airport
14764	Aransas Bay 1 mi. SE of SH 35 Bridge
14765	Aransas Bay at Dead Man Island
14767	Aransas Bay at Half Moon Reef
14768	Aransas Bay 1 mi. North Jay Bird Point
14770	Aransas Bay ½ mi. SE of Goose Island
14771	Aransas Bay ½ mi. south of Dunham Point
14773	Aransas Bay 1 mi. south of Long Reef
14777	Aransas Bay 1/4 mi. NE of Mud Island

Wastewater dischargers

Permit type	Number of outfalls
Domestic	5

Historical fish kills

Start date	Location	Fish killed	Suspected cause
05/29/1997	From Goose Island S to Cove Harbor, mouth of Mission Bay in Copano E to Aransas Bay	1,000	Disease
11/09/1998	Western section of Redfish Bay	42,968	Physical Damage/Trauma
03/12/1999	South Bay near Harbor Island area	8,521	Physical Damage/Trauma

Bays and Estuaries

Segment 2472 - Copano Bay/Port Bay/Mission Bay

Water body classification:	Classified
Water body type:	Estuary
Water body length / area:	65.20 Sq. miles

Use support summary: Based on Texas Department of Health shellfish maps, 20.6 % of the bay (13.4 square miles near the ICWW, shoreline, Aransas/Mission Rivers, and Holiday Beach) does not support the oysters waters use. The remaining 79.4% (51.8 square miles) of the bay fully supports the use. Non-supporting areas are restricted or prohibited for the growing and harvesting of shellfish for direct marketing due to potential microbial contamination.

Available data indicate the aquatic life and general uses are supported in a 16 square mile area near SH 35 and FM 188. The contact recreation use is supported. The fish consumption use was not assessed due to insufficient data.

Water quality concerns summary: Available data indicate that there are no water quality concerns.

Additional information: A project is underway for fecal coliform bacteria to do one or more of the following: assess the relevant water quality standard; to confirm the impairment; to conduct a total maximum daily load (TMDL) to evaluate the causes and sources and allocate the allowable loading; or to correct the impairment under another program. For more information on specific TMDL projects, visit the TNRCC Web site at *www.tnrcc.state.tx.us/water/quality/tmdl/*.

Monitoring sites used in the assessment

Station	Station Description
12945	Copano Bay at FM 136 Bridge south of Bayside
13404	Copano Bay west side of fishing pier, alongside SH 35
13405	Port Bay at FM 188 west of Rockport
14779	Copano Bay at south end of causeway
14780	Copano Bay off north end of pier reef
14781	Copano Bay at Redfish Point
14782	Copano Bay 800 yds. NE of Salt Lake
14783	Copano Bay 1 mi. east of Bayside
14784	Copano Bay at end of Shell Bank Reef
14785	Copano Bay 1-1/2 mi. NW of the causeway
14786	Copano Bay 1 mi. west of Rattlesnake Point
14787	Copano Bay 1-1/4 mi. SE of Bayside
14788	Copano Bay ½ mi. south of Bayside
14790	Copano Bay 400 yds. north of Lone Tree Point
14792	Copano Bay 800 yds. SE of Turtle Point
14793	Copano Bay 300 yds. west of Palmeto Point

Wastewater dischargers

Permit type	Number of outfalls
Domestic	3
Industrial	1

Historical fish kills

Start date	Location	Fish killed	Suspected cause
06/01/1994	Copano Bay, Copano Cove Channels	2,000,000	Low Dissolved Oxygen
07/15/1994	Copano Bay, Copano Cove, Island Road	2,000,009	Low Dissolved Oxygen
06/04/1996	Copano Bay, Holiday Beach Canals, 195 Sailfish Lane	10,000	Low Dissolved Oxygen
06/12/1996	Copano Bay, Holiday Beach canals	6,003,000	Low Dissolved Oxygen

Bays and Estuaries

Segment 2473 - St. Charles Bay

Water body classification: Classified

Water body type: Estuary

Water body length / area: 13.10 Sq. miles

Use support summary: Based on Texas Department of Health shellfish maps, 51.5% of the bay (6.7 square miles of the northern half, tributary and marsh drainages) does not support the oyster waters use. The remaining 48.5% (6.4 square miles) of the bay fully supports the oyster waters use. Nonsupporting areas are restricted or prohibited for the growing and harvesting of shellfish for direct marketing due to potential microbial contamination.

Available data indicate the aquatic life, contact recreation, and general uses are supported. The fish consumption use was not assessed due to insufficient data.

Water quality concerns summary: Available data indicate that there are no water quality concerns.

Additional information: A project is underway for fecal coliform bacteria to do one or more of the following: assess the relevant water quality standard; to confirm the impairment; to conduct a total maximum daily load (TMDL) to evaluate the causes and sources and allocate the allowable loading; or to correct the impairment under another program. For more information on specific TMDL projects, visit the TNRCC Web site at *www.tnrcc.state.tx.us/water/quality/tmdl/*.

Monitoring sites used in the assessment

Station	Station Description
13406	St. Charles Bay NE of Goose Island State Park
14393	St. Charles Bay at mouth, reefs located just south of Black Jack Point
14774	St. Charles Bay 1/4 mi. west of Egg Point

Monitoring sites, continued

Station	Station Description
14776	St. Charles Bay ½ mi. east of Big Sharp Point
15004	St Charles Bay approximately 0.6 mi. NE of Hail Point

Wastewater dischargers

Permit type	Number of outfalls
Domestic	1
Industrial	1

Historical fish kills

Start date	Location	Fish killed	Suspected cause
07/08/1995	St. Charles Bay near Salt Creek	150	Physical Damage/Trauma
07/08/1995	St. Charles Bay near Salt Creek	200	Physical Damage/Trauma
03/03/1999	Salt Creek	3	Physical Damage/Trauma

Bays and Estuaries

Segment 2481 - Corpus Christi Bay

Water body classification:	Classified
Water body type:	Estuary
Water body length / area:	123.10 Sq. miles

Use support summary: Based on Texas Department of Health shellfish maps, 13.0% (16.0 square miles near Corpus Christi) does not support the oyster waters use. The remaining 87.0% (107.1 square miles) of the bay fully supports the oyster waters use. Nonsupporting areas are restricted or prohibited for the growing and harvesting of shellfish for direct marketing due to potential microbial contamination.

Available data indicate the aquatic life, contact recreation, and general uses are supported. The fish consumption use was not assessed due to insufficient data.

Water quality concerns summary: Available data indicate that there are no water quality concerns.

Additional information: A project is underway for fecal coliform bacteria to do one or more of the following: assess the relevant water quality standard; to confirm the impairment; to conduct a total maximum daily load (TMDL) to evaluate the causes and sources and allocate the allowable loading; or to correct the impairment under another program. For more information on specific TMDL projects, visit the TNRCC Web site at *www.tnrcc.state.tx.us/water/quality/tmdl/*.

Monitoring sites used in the assessment

Station	Station Description
13407	Corpus Christi Bay at Corpus Christi CM #62
13409	Corpus Christi Bay La Quinta CM 16
13410	Corpus Christi Bay near Corpus Christi Ship CM 86
13411	Corpus Christi Bay ½ mi. off Doddridge Road
14469	Corpus Christi Bay at southeast end of Shamrock Island in Shamrock cove

Monitoring sites, continued

Station	Station Description
14818	Corpus Christi Bay 500 yds. from the mouth of Oso Bay
14819	Corpus Christi Bay 300 yds. offshore from storm sewer outfall
14820	Corpus Christi Bay 200 yds. off Cole Park Fishing Pier
14821	Corpus Christi Bay at mouth of the Corpus Christi Boat Basin
14822	Corpus Christi Bay east of Rincon Point
14823	Corpus Christi Bay at Indian Reef
14824	Corpus Christi Bay west end of Portland
14825	Corpus Christi Bay 100 yds. west of Point Mustang
14826	Corpus Christi Bay 400 yds. from mouth of Sinclair Cut
14827	Corpus Christi Bay 600 yds. west of La Quinta Channel Turning Basin
14828	Corpus Christi Bay at middle of Long Reef
14829	Corpus Christi Bay at the intersection of Corpus and Ingleside Channels
14830	Corpus Christi Bay at Port Ingleside
14959	Corpus Christi Bay at Indian Point pier immediately south of the City of Portland at US 181

Published studies

Publication	Date	Author
AS 103 Corpus Christi Bay	April 1994	Bowman/Caudle/Reigel
IS 63 Corpus Christi Bay	Sept. 1981	Davis, J.
LP 89-07 Corpus Christi Bay	June 1987	Davis, J.

Wastewater dischargers

Permit type	Number of outfalls
Domestic	6
Industrial	12

Historical fish kills

Start date	Location	Fish killed	Suspected cause
03/30/1995	Corpus Christi Bay	2,313	Unknown
03/30/1995	Corpus Christi Bay, Ingleside by the Bay	2,223	Organic compound
08/29/1995	Corpus Christi Bay, ½ mile S Doddridge to T-heads along Ocean Dr	50,000	Temperature
05/13/1997	Van Glidden Ditch, Bear Lane , Corpus Christi	39	Organic compound
06/11/1997	Corpus Christi Bay, North Beach, near the lifeguard stand	37	Physical Damage/Trauma
09/01/1998	Corpus Christi Bay at Oso Bay bridge	1,585	Physical Damage/Trauma
04/25/1999	Eastern section of upper Laguna Madre Bay and southeastern section of Corpus Christi Bay	27,847	Physical Damage/Trauma

Bays and Estuaries

Segment 2482 - Nueces Bay

Water body classification: Classified

Water body type: Estuary

Water body length / area: 28.90 Sq. miles

Use support summary: Based on Texas Department of Health shellfish maps, 100% of the bay (28.9 square miles) does not support the oyster waters use. Nueces Bay is restricted for the growing and harvesting of shellfish for direct marketing due to zinc in oyster tissue.

Available data indicate the aquatic life, contact recreation, and general uses are supported. The fish consumption use was not assessed due to insufficient data.

Water quality concerns summary: Available data indicate that there are no water quality concerns.

Additional information: A project is underway for zinc to do one or more of the following: assess the relevant water quality standard; to confirm the impairment; to conduct a total maximum daily load (TMDL) to evaluate the causes and sources and allocate the allowable loading; or to correct the impairment under another program. For more information on specific TMDL projects, visit the TNRCC Web site at *www.tnrcc.state.tx.us/water/quality/tmdl/*.

Monitoring sites used in the assessment

Station	Station Description
13420	Nueces Bay US 181 Bridge at causeway (north side)
13421	Nueces Bay at US 181 Bridge at causeway (south side)
13422	Nueces Bay ½ mi. from south shore at east overhead power line
13423	Nueces Bay 1 mi. from north shore at east overhead power line
13424	Nueces Bay ½ mi. from north shore at west overhead power line at the 11th pair of pylons from the north shore

Monitoring sites, continued

Station	Station Description
13425	Nueces Bay near Whites Point
14831	Nueces Bay north of Indian Point
14832	Nueces Bay 1 mi. west of Portland
14833	Nueces Bay south side of bay at Central Power and Light's Discharge
14834	Nueces Bay south side of bay off Avery Point
14835	Nueces Bay north of grain silo's
14836	Nueces Bay 500 yds. offshore from eastern most overhead power cable

Published studies

Publication	Date	Author
AS-49/SR Nueces Bay	Aug. 1993	Caudle, C. (Region 14)
IMS 66 Nueces Bay	April 1976	Jensen/Bowman (Region

Wastewater dischargers

Permit type	Number of outfalls
Domestic	2
Industrial	5

Historical fish kills

Start date	Location	Fish killed	Suspected cause
10/08/1994	Gum Hollow Creek, Nueces and Corpus Christi Bays	14,630	Organic compound
04/08/1996	Nueces Bay, E of Whites Pt, all across Nueces Bay	184,117	Physical Damage/Trauma
09/23/1997	Sunset Lake, Western end, Nueces Bay	22,254	Low Dissolved Oxygen
05/04/1998	Drainage Ditch adjacent to Nueces Bay one mile west of Portland	1,335,385	Low Dissolved Oxygen
05/04/1998	Drainage ditch adjacent to SeaBreeze Trailer Park off Nueces Bay	1,455,000	Low Dissolved Oxygen

Bays and Estuaries

Segment 2483 - Redfish Bay

Water body classification: Classified

Water body type: Estuary

Water body length / area: 28.80 Sq. miles

Use support summary: Available data indicate the aquatic life and general uses are supported in an area near SH 231. The contact recreation use is supported. The fish consumption use was not assessed due to insufficient data. Based on Texas Department of Health shellfish maps, the oyster waters use has not been assessed for the bay. The Texas Department of Health has recently begun sampling in the area to allow assessment in future years.

Water quality concerns summary: Available data indicate that there are no water quality concerns.

Monitoring sites used in the assessment

Station	Station Description
13426	Redfish Bay at SH 361 at 3rd Bridge between Aransas Pass & Port Aransas
13779	Port Aransas Municipal Harbor at public boat launch
14806	Redfish Bay 1-1/4 mi. south of Ransom Island

Published studies

Publication	Date	Author
LP 86-10 Conn Brown Harbor	Nov. 1986	Bowman/Shipley (Region14

Wastewater dischargers

Permit type	Number of outfalls
Domestic	2
Industrial	5

Bays and Estuaries

Segment 2483A - Conn Brown Harbor (unclassified water body south of Aransas Pass in Aransas County)

Water body description:	From the confluence with the Aransas Channel southeast of Aransas Pass in San Patricio Count to a point 1 mile northeast in Aransas County.
Water body classification:	Unclassified
Water body type:	Estuary
Water body length / area:	0.10 Sq. miles
Use support summary:	The aquatic life use is not supported due to depressed dissolved oxygen concentrations. The contact recreation use is supported. The fish consumption use was not assessed due to insufficient data.
Water quality concerns summary:	Available data indicate that there are no water quality concerns.
Additional information:	A project is scheduled for dissolved oxygen to do one or more of the following: assess the relevant water quality standard; to confirm the impairment; to conduct a total maximum daily load (TMDL) to evaluate the causes and sources and allocate the allowable loading; or to correct the impairment under another program. For more information on specific TMDL projects, visit the TNRCC Web site at *www.tnrcc.state.tx.us/water/quality/tmdl/*.

Monitoring sites used in the assessment

Station	Station Description
13287	Conn Brown Harbor

Bays and Estuaries

Segment 2484 - Corpus Christi Inner Harbor

Water body classification: Classified

Water body type: Estuary

Water body length / area: 0.70 Sq. miles

Use support summary: Available data indicate that all uses are supported.

Water quality concerns summary: Near Navigation Boulevard and the Viola Turning Basin, ammonia nitrogen is a concern. Near the Viola Turning Basin, nitrite + nitrate nitrogen is a concern. Near Navigation Boulevard, cadmium, copper, lead, selenium, and zinc in sediment are concerns.

Monitoring sites used in the assessment

Station	Station Description
13430	Corpus Christi inner harbor in Avery Turning Basin
13432	Corpus Christi inner harbor near Navigation Blvd. Draw Bridge
13439	Corpus Christi Inner Harbor in Viola Turning Basin

Published studies

Publication	Date	Author
IS 63 Corpus Christi Inner Harbor	Sept. 1987	Davis, J.
LP 197 Corpus Christi Inner Harbor	Jan. 1985	Bowman/Jensen (Region 14)
LP 89-07 Corpus Christi Inner Harbor	June 1987	Davis, J.

Wastewater dischargers

Permit type	Number of outfalls
Domestic	1
Industrial	69

Historical fish kills

Start date	Location	Fish killed	Suspected cause
01/05/1996	Corpus Christi Inner Harbor at Tule Lake lift bridge	2,284	Temperature
05/10/1996	Broadway to Corpus Christi Inner Harbor	2,000	Low Dissolved Oxygen

Bays and Estuaries

Segment 2485 - Oso Bay

Water body classification: Classified

Water body type: Estuary

Water body length / area: 7.2 Sq. miles

Use support summary: Based on Texas Department of Health shellfish maps, 100% of the bay (7.2 square miles) does not support the oyster waters use. Nonsupporting areas are restricted or prohibited for the growing and harvesting of shellfish for direct marketing due to potential microbial contamination.

The aquatic life use is partially supported due to depressed dissolved oxygen concentrations. The contact recreation and general uses are supported. The fish consumption use was not assessed due to insufficient data.

Water quality concerns summary: Available data indicate that there are no water quality concerns.

Additional information: Projects are underway for fecal coliform bacteria and dissolved oxygen to do one or more of the following: assess the relevant water quality standard; to confirm the impairment; to conduct a total maximum daily load (TMDL) to evaluate the causes and sources and allocate the allowable loading; or to correct the impairment under another program. For more information on specific TMDL projects, visit the TNRCC Web site at *www.tnrcc.state.tx.us/water/quality/tmdl/*.

Monitoring sites used in the assessment

Station	Station Description
13026	Cayo del Oso at Yorktown Bridge in Corpus Christi
13027	Oso Creek at FM 2444 south of Corpus Christi
13028	Oso Creek at SH 286 south of Corpus Christi
13029	Oso Creek at FM 763 SW of Corpus Christi

Monitoring sites, continued

Station	Station Description
13440	Oso Bay at Padre Island Drive (SH 358)
15003	Oso Bay approximately 0.5 mi. SE of SH 358 (South Padre Island Drive)

Wastewater dischargers

Permit type	Number of outfalls
Domestic	9
Industrial	10

Historical fish kills

Start date	Location	Fish killed	Suspected cause
06/14/1996	Pond adjacent to Oso Creek	12	Low Dissolved Oxygen

Bays and Estuaries

Segment 2491 - Laguna Madre

Water body classification:	Classified
Water body type:	Estuary
Water body length / area:	347.40 Sq. miles

Use support summary:

The aquatic life use is partially supported due to depressed dissolved oxygen concentrations in the upper third of the Laguna Madre and a localized area near the mouth of the Arroyo Colorado.

Based on Texas Department of Health shellfish maps, 5.2% of the Laguna Madre (18.1 square miles near the Arroyo Colorado and along the Intercoastal Waterway) does not support the oyster waters use, and 38.8% (134.8 square miles) fully supports the use. The remaining 56% (195.5 square miles) of the Laguna Madre, from Port Mansfield to Corpus Christi, has not been assessed. Non-supporting areas are restricted for the growing and harvesting of shellfish for direct marketing, or prohibited due to potential microbial contamination.

The contact recreation, fish consumption, and general uses are supported.

Water quality concerns summary:

Near the mouth of the Arroyo Colorado at the Intracoastal Waterway, nitrite + nitrate nitrogen is a concern. Near the Arroyo Colorado and Baffin Bay, chlorophyll *a* is a concern.

Additional information:

A project is underway for fecal coliform bacteria to do one or more of the following: assess the relevant water quality standard; to confirm the impairment; to conduct a total maximum daily load (TMDL) to evaluate the causes and sources and allocate the allowable loading; or to correct the impairment under another program.

Additional information, continued:

A project is scheduled for dissolved oxygen to do one or more of the following: assess the relevant water quality standard; to confirm the impairment; to conduct a total maximum daily load (TMDL) to evaluate the causes and sources and allocate the allowable loading; or to correct the impairment under another program.

For more information on specific TMDL projects, visit the TNRCC Web site at *www.tnrcc.state.tx.us/water/quality/tmdl/*.

Monitoring sites used in the assessment

Station	Station Description
13443	Laguna Madre South of the intersection of ICWW and Padre Island Causeway
13444	Laguna Madre at intersection of ICWW at Baffin Bay Marker
13445	Laguna Madre at ICWW near Bird Island
13446	Laguna Madre Intracoastal Canal at Marker 129 east of Port Isabel
13447	Laguna Madre intersection of Intracoastal Canal and Arroyo Colorado
13448	Laguna Madre intersection of Intracoastal Canal and Port Mansfield Channel
14843	Laguna Madre at Port Mansfield CM 40
14844	Laguna Madre at ICWW marker 49
14845	Laguna Madre at ICWW CM 109
14861	Laguna Madre 300 yds. NW of the Yacht Club Turning Basin entrance
14862	Laguna Madre 300 yds. NE of entrance to Yacht Club Turning Basin
14868	Laguna Madre 200 yds. off South Padre Island 2 mi. north of the causeway
14869	Laguna Madre 200 yds. off Laguna Heights Shoreline
14870	Laguna Madre 200 yds. off Laguna Vista Shoreline
14876	Laguna Madre at the middle of the South Padre Island Causeway
14877	Laguna Madre near range marker
14878	Laguna Madre at entrance to Sea Ranch Marina Channel
14879	Laguna Madre 1/4 mi. south of coastguard boat docks
15006	Laguna Madre approximately 0.5 mi. west of ICWW Marker 123

Published studies

Publication	Date	Author
IS 68 Port Mansfield	Oct. 1983	Bowles, R. (Region 15)
LP 86-09 Port Isabel Harbor	Nov. 1986	Webster, C.

Wastewater dischargers

Permit type	Number of outfalls
Agriculture	3
Domestic	43
Industrial	17

Historical fish kills

Start date	Location	Fish killed	Suspected cause
07/05/1995	Laguna Madre, Padre Isles development. Fortuna Bay off Whitecap and Gypsy	72	Low Dissolved Oxygen
07/08/1995	Upper Laguna Madre (Land Cut) @Dead Man's Hole, 100yds E of duck blind	30	Physical Damage/Trauma
09/23/1995	Laguna Madre in area of Laguna Vista and Port Isabel	9,000,000	Temperature
09/23/1995	Lower Laguna Madre Bay North of Pt Isabel and Laguna Heights shoreline	9,000,000	Temperature
02/04/1996	Lower Laguna Madre, Brazos Santiago Pass, Port Isabel	500	Temperature
05/20/1996	Laguna Madre, Irrigation ditch near La Sara, Raymondville, FM 186	400	Low Dissolved Oxygen
05/31/1996	Laguna Madre, Tropic Isles Subdivision, Flour Bluff	10,000	Low Dissolved Oxygen
09/29/1996	Punta Bonair, off of Sea Pines, Padre Isles Canals, Laguna Madre	20	Low Dissolved Oxygen
08/23/1997	Laguna Madre, Tropic Isles Canals, off Carribean and Azores	1,000	Low Dissolved Oxygen
12/25/1998	Port Isabel finger channels (Laguna Madre)	5,045	Temperature
12/29/1998	Canal adjacent to Cobo de Bara Circle on Padre Island (Laguna Madre)	200	Temperature
01/04/1999	Western section of upper Laguna Madre Bay from shore out to Intracoastal canal	47,917	Physical Damage/Trauma

Bays and Estuaries

Segment 2492 - Baffin Bay/Alazan Bay/ Cayo del Grullo/Laguna Salada

Water body classification: Classified

Water body type: Estuary

Water body length / area: 49.80 Sq. miles

Use support summary: Available data indicate the aquatic life, contact recreation, and general uses are supported. The fish consumption use was not assessed due to insufficient data. Sampling by the Texas Department of Health has not been conducted in the bay to allow assessment of the oyster waters use.

Water quality concerns summary: Near East and West Kleberg Points in Baffin Bay, chlorophyll *a* is a concern.

Monitoring sites used in the assessment

Station	Station Description
13033	San Fernando Creek at US 77 Bypass Bridge at Kingsville
13034	Los Olmos Creek at US 77 south of Riviera
13450	Baffin Bay at CM 14
13452	Baffin Bay at CM 36

Published studies

Publication	Date	Author
R 90-01 San Fernando Creek	Oct. 1990	Bowman/Trebatoski/Shipley, F.

Wastewater dischargers

Permit type	Number of outfalls
Agriculture	5
Domestic	31
Industrial	6

Historical fish kills

Start date	Location	Fish killed	Suspected cause
01/28/1997	Kleberg County Park, Escondido Creek	50	Temperature
10/20/1998	Near Drum Pt. In Cayo Del Grullo	1,527	Physical Damage/Trauma
04/17/1999	Los Olmos Creek in Kenedy Co.	300	Low Dissolved Oxygen

Bays and Estuaries

Segment 2493 - South Bay

Water body classification: Classified

Water body type: Estuary

Water body length / area: 7.80 Sq. miles

Use support summary: Available data indicate the aquatic life, contact recreation, and general uses are supported. The fish consumption use was not assessed due to insufficient data. Based on Texas Department of Health shellfish maps, 100% (7.8 square miles) of the bay supports the oyster waters use.

Water quality concerns summary: Available data indicate that there are no water quality concerns.

Monitoring sites used in the assessment

Station	Station Description
13459	South Bay near Ship CM 17
14855	South Bay 100 yards NW of Brazos Island
14856	South Bay
14857	South Bay
14858	South Bay
14865	South Bay middle of bay
14880	South Bay

Historical fish kills

Start date	Location	Fish killed	Suspected cause
04/30/1996	South Bay, South Flats behind Koepernik Shores Development	123	Low Dissolved Oxygen

Bays and Estuaries

Segment 2494 - Brownsville Ship Channel

Water body classification: Classified

Water body type: Estuary

Water body length / area: 1.50 Sq. miles

Use support summary: Available data indicate all uses are supported throughout the channel.

Water quality concerns summary: Available data indicate that there are no water quality concerns.

Monitoring sites used in the assessment

Station	Station Description
13460	Brownsville Ship Channel near Ship CM 35 (Black Buoy)

Published studies

Publication	Date	Author
IS 55 Brownsville Ship Channel	June 1982	Bowles, R. (Region 15)

Wastewater dischargers

Permit type	Number of outfalls
Domestic	14
Industrial	3

Historical fish kills

Start date	Location	Fish killed	Suspected cause
03/05/1996	Brownsville Ship Channel	40	Temperature

Rio Grande Coastal Basin

Segment 2494A - Port Isabel Fishing Harbor (unclassified water body in Port Isabel in Cameron County)

Water body description:	From the confluence with the Laguna Madre in Cameron County to 1/4 mile south of SH 100 in Port Isabel in Cameron County.
Water body classification:	Unclassified
Water body type:	Estuary
Water body length / area:	0.20 Sq. miles
Use support summary:	Available data indicate that the aquatic life and contact recreation uses are supported in the harbor. The fish consumption use was not assessed due to insufficient data.
Water quality concerns summary:	Available data indicate that there are no water quality concerns.

Monitoring sites used in the assessment

Station	Station Description
13285	Port Isabel Fishing Harbor at SH 100 Bridge